AMERICAN VETERINARY REVIEW.

APRIL, 1896.

EDITORIAL.

BEGINNING VOLUME XX.—Just twenty years ago this month the first number of the REVIEW was issued to the American veterinary public, the centennial year of the Republic. The history of veterinary medicine in this country is almost embraced within the pages of the journal during those eventful years, and we are reasonably certain that we are within the bounds of a truthful assertion when the statement is made that no science nor branch of science has developed more of its possibilities during that period than has veterinary medicine, not even the wonderful unfolding of the mysteries of that department of physics which has given us the marvels of electricity. Not of such importance to our integral life are any of the discoveries of the electrical scientists in comparison with the vital principles and truths made certain by the microscope in the vast new field of bacteriology, which has removed the veil of error and superstition from the eyes of etiological teachings, given us weapons with which to combat the living organism which is known to be the direct factor in the production of disease and death. As that microbe of disease has flourished and grown in an inviting pabulum in its host, producing and sending through the life current of its victim its deadly ptomaines and toxines, so has the bacteriologist labored without the body to find an anti-toxine which would effectually check the effects of his enemy within the living individual. Nor has he been without success; for we have already in common and successful use a number of such abortive agents, many of which have

the unqualified support of the public on account of demonstrated merit.

Scarcely less wonderful has grown the profession in numbers, education, capacity—in length, breadth and avoirdupois; better in all respects, from whatever line of vision. The double decade has witnessed the cementing of fraternal feeling in the establishment of associations in almost all States for the study of science, the interchange of views, and the fostering and enlarging of the spirit of progress; it has seen seats of education in the specialty become implanted at various centres, and the yearly broadening of the curriculum and the facilities for dispensing modern teachings, and, above all, the voluntary enlargement of the period of attendance, from the simple feeling of justice that the augmentation of the amount to be taught required a longer period in which to teach it. It may have been absolutely true that the amount of scientific knowledge possessed then could be transmitted in the restricted course, and equally true that in its expanded form the longer period is necessary.

The United States Veterinary Medical Association is the parent of the AMERICAN VETERINARY REVIEW, and the child is especially proud of its progenitor, while we feel certain there is no occasion for the father to deny his offspring, as the weakling which once struggled with a few pages of scientific material, contributed by a handful of devoted and enthusiastic men, is now entering robust manhood with a body of the strongest minds of modern times, not only of this but all countries where scientific veterinary medicine exists. From its limited number of pages it has grown to know no bounds, its limitations being decided by the demands upon her columns. Every year has brought its improvements, and hereafter every month will mark the advancement. She is more thoroughly equipped to-day than ever, and the profession—which has made her what she is—shall reap the reward of her opportunities. To the members of the profession who contribute to her pages, much more than to the executive staff, is due the credit of this, for without their gracious assistance, all else were futile. Then to our

collaborators, correspondents and friends throughout the country we extend our heartfelt thanks and congratulations upon this auspicious occasion.

VIRGINIA TO THE FRONT.—The following letter from President Harbaugh, of the Virginia State Veterinary Medical Association, explains itself:

RICHMOND, VA., March 5, 1896.

Editor American Veterinary Review:

DEAR SIR.—I send you herewith copies of two laws enacted by the legislature of Virginia at its recent session.

The law to regulate the practice of veterinary medicine and surgery in this State was instigated, framed, worked for and obtained solely by the untiring efforts of the Virginia State Veterinary Medical Association.

Our State association has been in existence but two years, and during that time it has placed the profession upon an equal footing with other learned professions, and has commanded the respect and recognition, not only of the people at large, but also of the General Assembly of Virginia.

When you again call the roll of States having proper veterinary legislation, score one for Virginia.

"Old Virginia never tire." Respectfully,

W. H. HARBAUGH.

The little handful of veterinarians who, two years ago, formed the nucleus of what is now a vigorous, enthusiastic and intelligent veterinary association, have much to be proud of, and well deserve the compliments that are being showered upon them from all over the country for their devotion to their profession and their fair commonwealth. Their work has been herculean, but the words of Cardinal Richelieu were ever before them: "There's no such word as fail." The character of their meetings is of the highest order, and for the paucity of their membership the amount and scope of their proceedings are worthy of all praise. In elevating the profession in the Old Dominion, the association can have the double satisfaction that her example will accomplish good in every State where there exists a veterinary society, and redound to the benefit of science everywhere. The act referred to in Dr. Harbaugh's letter will be found on another page.

AN UNMERITED SLUR FROM WITHIN.—Dr. F. S. Billings is contributing a series of articles upon "Veterinary Colleges and Education" to the *Turf, Field and Farm*. In the issue of March 6th there appears Article No. VIII., the first one that

has come to our notice, and we trust the last of its kind that is to appear, though the installment ends with the note, "To be continued." Near the beginning of this article occurs this paragraph:

"Were I not unfitted by nature for human practice I should be a physician, the city associations of the veterinarian being such that I cannot see how any educated and self-respecting man can assimilate with them. The veterinarian in cities is in the hands of grooms and horse dealers and forced to be more or less companionable with a class of men the less he has to do with the better. For this reason I advise students to take even smaller practices in country districts wherever they can find such promising a fair living."

Either Dr. Billings does not know what he is writing about or else his experience has been such as he has depicted in the above extract, and he speaks of the status of the city veterinarian and his environments from personal contact. We are quite sure that the general remarks which he indulges in do not truthfully portray the typical city practitioner, who has the opportunity and, as a rule, lives in an atmosphere of respectable dignity, the picture which he has drawn being quite the exception, and applicable only to such men as would fall under such influences whether in the metropolitan or rural districts. The college-bred American veterinarian of to-day is a gentleman in character and education, and the calumny of Dr. Billings is in poor taste, especially when the remainder of his article is read, consisting, as it does, of an egotistical eulogy of himself, and writing for a journal widely circulated among the veterinarians' best patrons, whose good opinions of the profession as a whole are much to be desired; and, therefore, the strictures referred to could hardly have been expected from a member of the profession.

NEW YORK LEGISLATION.—Dr. Arthur O'Shea, chairman of the Legislative Committee of the New York County, and member of the same committee of the State Society, has addressed a letter to the local veterinarians, urging them to write personal letters to Senator Malby, Chairman of the Codes Committee, insisting upon arousing the Jury Bill from the slumbering condition into which it relapsed after reaching his committee. Every metropolitan veterinarian should

follow the suggestion, as well as interesting his representative in the manifest injustice which has been done his constituents. The Bill is known as "An Act to amend sections 1081 and 1127 of the Code of Civil Procedure, being Senate Bill No. 227." An act to enable James Wixon, of Steuben County, to practice veterinary medicine and surgery as a profession, has passed the House, and is now before the Judiciary Committee of the Senate, of which Senator Lexow is chairman. O'Shea states that this man is entirely unworthy, and advises a vigorous protest by veterinarians throughout the State.

MASSACHUSETTS CATTLE COMMISSION.—We have received the report of this Commission, which is most exhaustive. That portion which refers to the tuberculin test is especially interesting, showing, as it does, the experience of the stock-keeper with reference to the effect of the inoculations upon the milk secretion. The letters received in answer to their circular of inquiry numbered 243, of which only 45 were unfavorable to the test.

WE REGRET to announce the serious illness of Prof. R. S. Huidekoper, of the *Journal of Comparative Medicine*, from pleuro-pneumonia, at his home in this city.

ORIGINAL ARTICLES.

HOW GOLDEN-RODS MAY BE POISONOUS.

By H. H. RUSBY, M.D.,
Professor of Botany in the American Veterinary College.

Since I have been made responsible in the February issue of the REVIEW for the statement that golden-rods are poisonous to horses, notwithstanding that I have never made the statement that they are so in themselves, it seems desirable that I here state what little I know of this obscure subject.

Late in August, 1891, Dr. Jacob Helmer, of Scranton, Pa., called upon me to consult in reference to the poisoning of some valuable racing stock in a pasture near that city. He had carefully and repeatedly examined the pasture with a

view to the detection of known poisonous plants, but without success. He had studied his cases very thoroughly and was able to give a perfect account of the symptoms, upon which I expressed the opinion that no native plant other than some species of fungus could have been responsible for the results described. Subsequent observation revealed the fact that golden-rods were abundant in the pasture and that these were thickly infested with parasitic fungi. It was further observed that these were eaten by the horses, and it is my recollection that Dr. Helmer stated that the affected animals exhibited a morbid appetite for the plant, not observed in those which were healthy.

The specimens were submitted to Prof. Byron D. Halsted for determination, and he reported the principal fungus to be *Coleosporium solidaginus*, Thum. Many of the sori of this were in turn infested with a second species, *Darluca filum*, Cast. Neither Prof. Halsted nor other mycologists to whom I submitted the query were aware of any poisonous record having been made by either of these fungi. Nevertheless, in view of the full report furnished by Dr. Helmer, and of the very thorough manner in which he had investigated the subject, I had no hesitation in pronouncing one or both of them to have been the probable poisoning agent.

Dr. Helmer subsequently performed some experiments upon rabbits and dogs, injecting subcutaneously an infusion of the Coleosporium, as well as he could separate it from the tissues of the host-plants. The results were distinctly poisonous, and fatal in all cases wherein rabbits were the subjects. The symptoms presented points of similarity to those observed in the poisoned horses. As these experiments were not carried out under the customary precautions and control conditions of the physiological laboratory, I could not fully endorse any conclusions deduced from the results. Nevertheless they were of great interest, and it is to be hoped that Dr. Helmer will yet publish them.

The conclusions reached from these cases were not regarded as sufficiently positive to warrant publication, but in view of the fact that since then various independent observ-

ers throughout the country have come to the conclusion that the cases of poisoning observed by them have been caused by golden-rods, the belief appears justified that they are either directly or indirectly poisonous. There is no evidence whatever that they are so directly, that is without reference to the parasites which they may bear. Of the seventy-five or more species in this country only one, *S. odora*, has been recognized as possessing physiological properties, and these only of a mildly stimulating character, due to its volatile oil, which has been administered in doses of 5 to 15 minims. As it is present in the ratio of only about one per cent. it would require a large amount of the plant to constitute an excessive dose. The plant was moreover extensively used by the aborigines for preparing a pleasant beverage, owing to its anise-like flavor. As it is a plant of the forest, or other shaded locations, it could not have been the active agent in the sunny pastures where these cases of poisoning have occurred. Finally, it is to be noted that the symptoms are not the result of over-stimulation, as would result from an excessive dose of a volatile oil, but those of a progressive blunting of the intellectual and spinal centres and a gradual decline of the vital powers. There is a decreased supply of blood in the extremities. In short, the effects are far more like those of ergot poisoning than of any volatile oil. While it is of course not absolutely impossible that poisonous properties reside in some of the members of the genus, it is in the highest degree improbable, and we are forced to the conclusion that it is not in the plant itself, but in its parasites that they are to be sought.

It is desirable that those who have found golden-rods to cause trouble in their pastures should hereafter observe these plants closely and ascertain whether they are in all such cases infested with other fungi. It is not difficult to detect. It appears upon the surface in the form of bright yellow or orange-colored spots of irregular form and size, often causing the leaves to become stunted, deformed and curled up. Later, if the *Darluca* develops upon them, these spots will show deep purple or blackish discolorations.

PARTURIENT APOPLEXY.

By W. Chas. Covey, D.V.S., Hudsonville, Mich.

In this article I shall not presume to add knowledge to the profession regarding the various types and variety of symptoms presented by this most fatal malady of the milch cow. Its history is contemporaneous with the most remote history of diseases of cattle. There can be no question that plethora is a necessary condition. I find it as frequently in cattle fed on dry clover as in those running upon rich clover pasture lands; but I have yet to meet my first case fed on corn fodder ensilage. Microscopic investigation has led me to maintain that there is invariably an extreme richness and density of the blood. I have often found the blood globules reduced to less than one-half their normal size. I have found fully as many cases of the disease when the temperature of the atmosphere was *below* 60 degrees as I have when it was higher. Perhaps the cases were of a more aggravated form during excessive hot weather. Constipation is always present. In one post mortem I found excessive emphysema, which, however, I believe existed prior to this sickness, but assuredly hindered recovery on account of imperfect oxydation of the air breathed. Now, I feel assured in placing emphasis upon the use of antii. et potassa. tart. (*tartar emetic*) in this disease. If to any one remedy more than another I owe my success in treating this disease it is tartar emetic. I think that after as careful a trial as I have made, even the most critical of my brother practitioners will excuse my enthusiasm in this matter. For such success to crown my efforts, after years of almost signal failure, is a matter that, to me, is extremely gratifying, especially when I see others having such poor success. It is true that I got my first ideas of this treatment from Harms, but I cannot agree with him in the amount to be given. I never give less than one ounce, and repeat until there is marked evidence of nausea, which is a guarantee of glandular activity. If the case is so far gone that it is impossible to excite glandular action then

the medicine can do no harm. As soon as nausea is manifested the drug should be discontinued and tonics given. A cathartic should always be given, also hypodermic injections of pilocarpine muriate. Strych. nitrate and aconitine crystals are very valuable adjuncts as indicated. And I feel that I cannot emphasize too strongly the benefits of the cold water rugs, well protected by warm blankets, especially in the more torpid types. Bleeding in this disease has usually been conducive of harm in my practice. I have found ounce doses of chlorate of potash every eight hours valuable for oxydizing the blood. In prolonged paraplegia I find friction, counter-irritation and electricity of importance; but this complication is one seldom met. Saline or soapy enemas of warm water assist greatly; also keep the head somewhat elevated with straw. I have found Knowles' eserine compound of value to create peristaltic action. It is *imperative that the bladder should be emptied every six or eight hours;* also the milk drawn off many times a day. Of the 34 cases that I have kept a record of, I have lost but nine. Four of these I feel sure I could have saved if I could have seen them sooner. Of the cases lost 6, or $66\frac{2}{3}$ per cent., were of the ultra congestive type. Of the 25 saved but five, or 20 per cent., were of that form of the disease. In no case herein mentioned was it more than 22 hours from calving before the animal went down.

CASE NO. 1.—Large, red cow, eight years old, very fat. Three hours after calving noticed by the owner to "hang back in her stall and stagger." Went down about one hour and a half later. I was called about four hours after she went down. Found her in a semi-comatose condition; temperature, 104.4°; respiration stertorous, but no great heat about the head. Gave the following drench:

Sodii sulph., ℥ xxxij; fl. ex. zingiberis, ℥ i; antii. et potass. tart., ℥ iss; aqua, q.s.

Gave also hypodermic injection of strych. sulph., gr. i; pilocarpine muriate, grs. iii; aconitine crystals, gr. $\frac{1}{4}$. Covered the body with rugs wrung out of ice water, protected by dry blankets. Left the following to be given in three hours: Antii. et potass. tart., potassa chlorate, a.a. ℥ i; fl. ex. pilocarpus, ℥ ss.

Four hours after this was given I again saw the cow. Temperature, 104.1°; there was no peristaltic murmur; complete coma; breathing stertorous. The medicine I had left had not been given on account of inability to swallow. I gave it through a rubber hose, and followed with the hypodermic dose: Strych. nitrate, eserine salicylate, a.a. gr. i.

Emptied the bladder, cow unable to contract bladder or sphincter. Left with instructions to keep up the ice-water packs, but prognosed unfavorable results. Saw her five hours later; slight peristalsis. Voluntary contractions of sphincter of urethra. Temperature, 102.8°. Still insensible to pain; eyes glassy, pupils dilated. Gave through a hose the following: Antii. et potass. tart., ʒ i; fl. ex. ipecac, gtts.x.

Hypodermically the following: Eserine salicylate, strych. nit., a.a. gr. i. Left with instructions to renew the cold water covering. Called eight hours later, found the cow up and eating. Left tonics; recovery complete.

CASE NO. 2.—March 26th. Called at 2.30 P.M. to see a fine, large grade Jersey—six years old—fat enough for beef. Had her calf just at dark the 24th. Had been down nine hours when I saw her first. Eyes fiery red, pupils dilated; head in constant motion; temp. per rectum 105,8°. Impossible to count the pulse; drew six quarts of blood from the jugular. Gave cathartic as in No. 1, and ammonia carbonate for tympanites. Hypodermic injection as follows:

Strych. sulph., gr. i; pilocarpine, grs. ij; aconitine chryst., gr. $\frac{1}{4}$. Drew off urine; no peristaltic action of the bowels. Applied ice to the head.

In two hours I gave the following: Antii. et potassa. tart., potassa chlorate, a.a. ʒ i; fl. ex. pilocarpus, ʒ iss. Left instructions to repeat dose every six hours.

March 27th, 8.35 A.M. Temperature 101.3°; congestion in head nearly gone. Still struggled some to rise; bowels moved off hard fæces, slimy and thickly covered with blood; pulse, 56. Stretched out her neck and tried to vomit. Skin damp with perspiration. Gave the following, with instructions to repeat every six hours:

Potass. nit., ʒ ss; pulvis nux vomica, ʒ ij. I did not see

her again; the owner told me she got up at 3.45 that afternoon.

CASE NO. 3.—April 3d. Nearly like No. 1, save the duration of sickness. Large grade Durham, ten years old. Well kept on rich clover hay and corn meal. Pursued the same treatment as in Case 1, save that I gave larger doses of eserine. Gave five ounce doses of potassa chlorate eight hours apart. She got up April 7th, and recovered.

CASE NO. 4.—May 16th. Same as No. 1, except that the temperature did not rise higher than 103.6.° Same treatment pursued. Roused from her stupor 17 hours after treatment began. Recovered.

CASE NO. 5.—Common native stock; very fat. Had been down 22 hours when I was called. Gave unfavorable prognosis. She no longer rested on her breast bone, but was stretched out full length upon her side; complete insensibility. Did not administer cathartic as before. Gave hypodermic injection: Pilocarpine, grs. ij; strych. nit., gr.i; digitaline, gr. $\frac{1}{20}$. Drugs did not react. Cow died three hours later.

CASE NO. 6.—Aug. 12th. I consider this a very remarkable case. A fine grade Jersey, 12 years old. Dropped within twenty minutes of calving. I was called twelve hours later and found her stretched out upon her side. Temperature 104.8°; pulse imperceptible; breathing stertorous. Absolutely no peristaltic murmur; no contractions in bladder. Prognosis fatal. Tried the following as an experiment: Antii. et potass. tart., ʒ ij; pilocarpine sulph., grs. ij; strych. nit., gr. i. *This I gave hypodermically.* Placed straw under her head to raise it above the body. Put on ice-water rugs, covered with two warm blankets. Returned in four hours, expecting to find her dead. Found very little change; slight peristalsis; pulse little stronger, temperature, 104.4°. Gave same as above with the addition of one-fourth grain of aconitine.

Six hours later found her conscious of her surroundings. Resting on her breast bone with feet underneath; would notice her calf. Gave her two pounds of magnesia sulph.

Six hours later her temperature was normal. Bowels moved after injections of salt and water. Would eat some, but could not rise. Gave quinine sulph., ʒ ij; fl. ex. nux vomica, ʒ i; to be repeated every four hours.

Fifteen hours later, owner reported her still unable to stand. Gave her strong currant of electricity along the spine. Left instructions to repeat in twelve hours. Cow recovered, but I had to contend with a *large ulcer at the point where the needle was inserted.*

CASE NO. 7.—Nearly the same as No. 5. Died in four hours after I first saw her. No chance for an autopsy.

CASE NO. 8.—Aug. 17th. This is the most remarkable case I ever have seen. This is a Jersey cow, very large and sleek, nine years old; a great pet and favorite of the family. She was turned into the pasture late on the morning of June 6th, apparently all right. Mr. Dearborn, the owner, had occasion to visit the pasture about noon, and found that she was not right. He drove her home with difficulty, on account of great weakness behind. I was away at the time, and a neighboring dairyman was called in consultation. He told Mr. D. that everything was all right, or would be, as soon as she dropped her calf. I was called about 7.30 that evening and found her comatose, but still lying on her breast bone, with head in flank. Breathing loudly stertorous; temperature, 108.2°. This was a much higher temperature than I had ever before met in this disease, and I must admit that I was quite alarmed for the cow's prospect. Examination found the bladder fearfully distended, and a dead malformed calf. I lost no time in removing the calf and placenta. The cow gave no aid in expelling the calf. Poured through a hose the following: Magnesia sulph., two pounds; antii. et potass. tart., ℥ iss; potassa chlorate, ℥ i; fl. ex. zingiberis, ℥ ss.

Gave hypodermically: Strych. nit., gr. i; aconitine crystals, gr. ¼; pilocarpine mur., gr. jv.

Took temperature one hour later and was much surprised to find only 104.8°. Gave enemas of soap and water; often changed hot water rugs over the loins. Returned at midnight and found no improvement in the condition. Nose plunged into the dust in front, and breathing the loudest I ever heard; temperature, 105.2°. Repeated the above hypodermic dose.

Saw her again in the morning; no change save slight per-

istalsis. The arm returned from exploring the rectum was covered with bad-smelling blood. Ordered the enemas kept up every hour with acidum carbolicum added. Hot packs to be kept up.

Was called out of the county, and upon returning at 10 P.M. was surprised to find her up and eating. All functions nearly normal; recovered.

CASES 9, 10, 11, 12, 13 and 14 not materially different from some cited. No. 15 was like No. 5, except that there was a regurgitation in her throat when she breathed. Inquiry revealed that a quart of kerosene oil had been poured through the nostrils and much had passed into the lungs. Died before I left.

NO. 16.—Extreme torpid type. Had been down 22 hours. Died fifteen minutes after taking cathartic. I got the credit of killing her with my medicine.

NOS. 17, 18, 19, 20, 21 and 22, very much like No. 1. All made good recoveries.

NO. 23, very much like No. 2; treatment the same. Cow died three hours after the first dose of medicine. The other cases up to No. 34 were but a repetition of some already given.

NO. 34 was a large grade Holstein, eleven years old. She was the third cow I had treated for that man within two years, for the same disease; and *she had her calf in the same box stall that was occupied by the others.* I am not prepared to say, as yet, that, for lack of proper sanitary precautions, the germs of contagion were spread.

NOS. 6, 17 and 31 were the same cow. When sick as Nos. 6 and 17, the disease presented the torpid form; but the last time it was highly congestive and she died within three hours from the time she went down.

I am attending, at this writing, the only case I have ever had where the cow was ill-fed. I am not altogether positive, as yet, of my diagnosis; I have seen the cow but once and fear complications.

Now I consider *any evidence of glandular activity* as a favorable symptom. Keep up peristaltic action, if possible. *Frequently empty the bladder*; keep the udder emptied; get

up as much activity as possible in the skin. Use *tartar emetic*, *pilocarpine*, *strychnine*, enemas and ice-water packs. And never give up the patient until she is well or dead.

If this treatment shall prove as highly satisfactory to my brother practitioners as it has to me, I shall have accomplished the object of this rambling but true statement of facts.

P.S.—No. 35 just died. Autopsy revealed abscess on the brain.

HÆMORRHAGIC ENTERITIS.

By W. L. West, V.S., Ellsworth, Me.

Read before the Maine Veterinary Medical Association.

I desire to call your attention to the above disease, not because I know more about it than anybody else, but because I know less about it than I wish to; consequently I hope this paper will call forth a spirited and edifying discussion.

In my estimation, hæmorrhagic enteritis is the cause of more sudden deaths in horses than all other causes combined, and the practitioner has less opportunity to prescribe intelligently from the fact that the owner usually diagnoses the case as the proverbial "stoppage of the water," and proceeds to dose the animal with nitre, aconite, saleratus, molasses, Johnson's liniment, Dr. Quack's fever drops, and any or all nostrums suggested by the neighbor who had a horse just like this, and cured him with a pint of spirits of turpentine, or some other equally absurd and heroic treatment. I have always taken a great interest in stomach and bowel diseases, and have made post mortems in every instance where such a proceeding has been possible, and I have invariably found one condition following the train of symptoms which I shall narrate. The disease in question is one which gravely concerns us as veterinary surgeons, and one which has received far less notice from classical writers than many others of infinitely less importance. This lesion has received many names, such as enteralgia, cutting colic, enterrhagica, red colic, etc.

History: In 1829 Rigot first noticed this condition; after

him, Schutz, Bouley, Cornevin and others alluded to it, but it remained for Bollinger, in 1870, to describe a typical case.

Etiology and Anatomy.—The causes are many and varied. I shall concern myself with but one at present, and that, in my estimation, is a very fruitful one. I refer to parasitic aneurism of the anterior mesenteric artery, which occurs in seventy-five per cent. of all horses, and, in many sections, more than that. Roll and Bollinger gave ninety to ninety-four per cent, while Ellenberger, in eighty-five post mortems, found eighty-four horses with aneurisms. Now, as you all will remember, the anterior mesenteric is given off from the aorta at nearly a right angle, two and one half inches posterior to the cœliac axis, and supplies the larger part of the intestinal mass with blood; it is divided into three fasciculi (left, right and anterior); the left fasciculus has about twenty branches, the first few of which go to the duodenum and anastomose with the duodenal artery, a branch of the cœliac axis. The more posterior branches are longer, and anastomose with the ilio-cœcal, a branch from the right fasciculus. The right fasciculus furnishes the ilio-cœcal, two cœcal and the right colic. The ilio-cœcal, I have already stated, anastomoses with branches from the left fasciculus. The cœcal arteries anastomose with each other. The right colic runs from the origin of the colon to its pelvic flexure, there inosculating with the left colic. The anterior fasciculus has only two arteries of importance, left colic and the first, or small, artery of the floating colon. The left colic runs along the colon from its termination to the pelvic flexure in an inverse direction to the passage of the food, and there inosculates with the right colic. These arteries send loops or transverse branches to each other along their whole course. The first artery of the floating colon anastomoses with a branch of the posterior mesenteric. The profusion of anastomoses of these arteries, you see, provides for compression or even obstruction, if not too sudden in occurrence, or too great in extent, as the blood can readily pass from the cœliac axis *via* the duodenal branch into the left fasciculus, thence to the ilio-cœcal, thence to the left colic, thence to the right colic, and to

the artery of the floating colon; and if we go back to the broncho-œsophageal we have it communicating with the gastric, so that we have nearly a complete collateral circulation posterior to the broncho-œsophageal.

Now, my idea is that we start with parasitic aneurism of the anterior mesenteric, with a thrombus and endoarteritis; with induration of the tunica intima and media, any sudden-acceleration of speed or volume of the blood stream, regardless of its causes, may break off a portion of the thrombus and sweep it along until it completely occludes some smaller vessel. The anæmic condition of the territory formerly supplied by the now obstructed vessel causes paralysis of the intestine, stasis and, possibly, a reflux of venous blood and chapedsis into the coats of the bowel and very frequently a flow into the lumen of the bowel, the paralysis of a portion of the bowel, without a consequent paralysis of the remainder, frequently leads to volvulus or invagination. The contents of the bowel rapidly undergo fermentation with the liberation of noxious gases and the formation of ptomaines, the absorption of which quickly poisons the nerve centers, causing coma and death, or death may occur from pressure exerted upon the diaphragm causing asphyxia, or again, rupture of the intestine may and frequently does occur. I think also death may occur from cardiac syncope from excess of foreign gases in the blood.

Symptoms.—Horse refuses to eat, has great thirst, pulse 60 to 100, full and strong, but not wiry nor thrilling at first, but may be so in secondary stage; constant pain, dull at first, later of lancinating character; lies down often, and very carefully; hippocratic countenance; sweats profusely; may sit on his haunches, or walk in a circle; abdomen usually slightly tympanitic; pupils dilated; pressure on abdomen causes severe pain—this, of course, is not seen if gangrene has taken place; temperature, 102 to 106°; respiration, 40 to 80, labored and noisy.

Treatment.—Quiet, an immediate hypodermic injection of morphine, gr. iij, atropine, gr. ½, with aseptic precautions. Warmth to surface of abdomen, moist if conditions favorable, dry if adverse; if pain abates give Brown's chlorodyne ʒj,

every hour, and, if necessary, every fifteen minutes, until physiological rest is assured. This is one of the best remedies I have ever used, and I have the formula, if any of you desire it, which is as follows:

℞ Morph., HCl., gr. viii; acidum, HCl., dil. ʒss; chloroform, ʒjss; cannabis indica tinct., ʒj; alcohol, ℥ss; ol. pip. menth., mij; capsicum ol. res., mj. Misce.

Friedberger and Fröhner give tartar emetic, calomel or alkalies. While I do not wish to carp at what I consider high authority, I must beg leave to differ diametrically from this line of treatment. Warm oatmeal gruel may be given sparingly, but I prefer rectal feeding if the case requires it, with milk, eggs or beef extract. The prime object in view is rest, maintenance of a *status quo* until resorption and collateral circulation is established. While any statement of cures can always be met with the saying that recovery would have taken place anyway, or that the case was one of mistaken diagnosis, I fully believe I have seen five cases of genuine hæmorrhagic enteritis cured by the above treatment, and I hope you will all try it and let me know what your experience is in regard to it.

Post Mortem Changes.—The stomach is thickened and the mucous membrane congested; usually the stomach contains some partly digested food. Some of our text-books claim the mucous membrane has many blood clots, but I have never found any. The duodenum, jejunum or ilium, or a portion of each, is filled with a hæmorrhagic exudate; the walls are infiltrated, indurated and discolored over the portion covered by the infarct, and if the case was one of the lingering variety, we may find necrosis, gangrene or rupture. If we examine carefully, we shall invariably find an embolism plugging the artery of supply of the infarcted region, and following on toward the aorta, we shall find a verminous aneurism of some of the large arterial trunks.

Trusting that you will pardon me for monopolizing so much time, and thanking you kindly for your earnest attention, I will now stop to hear the discussion.

SOME VETERINARY OPHTHALMOLOGY.

By GEORGE G. VAN MATER, M.D., D.V.S., Lecturer on Ophthalmology to the American Veterinary College.

In Act III. of "Romeo and Juliet" we find, "Men's eyes were made to look, and let them gaze," and having been requested to present some ophthalmological points in a veterinary light, I thought the above quotation pat, and so prefaced this paper with it. The eyes themselves do not see. Shakespeare again, in "Julius Cæsar," says: "The eye sees not itself, but by reflection, by some other things." Through the medium of an eye external impressions are focused upon the retina, which retina is an expansion of the optic nerve. Said optic nerve (the second pair) transmits the message to the perceptive organism, and thus we see. Thus, as in many another instance, we see the Queen's English misrepresenting facts, for when we say, the eye "sees," we are in error, for the eye does *not* see.

There has been much and weighty discussion on the origin of the optic nerve. We will briefly say that this nerve is continued externally with the side of the thalamus opticus, forming the corpora geniculata. By some the thalamus opticus is believed to be the true origin. Others, that as the external corpora geniculata is in contact with the natis, and the testis in contact with the internal corpora geniculata by a band of white fibres, therefore the corpora quadrigemina furnishes the source of origin. In mammals the ocular apparatus takes similar form to the human, with the exception that in some cases it may be elongated somewhat. In mammals the eyes are obliquely set. Only in man, apes and some night birds are the eyes so set as to permit visual lines directly ahead in parallels. The eye of the horse measures transversely 1.417 inches and vertically 1.575 inches. The eyeball, or bulbus, is protected anteriorly by two movable folds—the lids—superior and inferior, having an inner and outer angle, which angles are called the internal and external canthus. On the edge of each lid, very near the internal

canthus, is a small elevation containing a minute orifice—the punctum, and this punctum in turn leads to a small canal—the function of which is to carry away the tears, of which more hereafter. The lids are subject to diseases which are apt to mislead the superficial observer, and lead him to treat a comparatively simple matter as a deeper one. Take the condition of inflammation of the margins of the lids, with formation of crusts, and you will always have the crusts present. These crusts form hard borders and in place of a pliable, velvety lid, we have a stiff, irritating edge, rubbing over the ocular conjunctiva, with resulting inflammation, lachrymation, photophobia and nearly all the symptoms of a beginning conjunctivitis. Now do not treat this as such a condition, with atropia solutions, argent nit. solution, etc., when a simple but *thorough* cleansing of the edges of the lids, with the application of vaseline following, will produce a cure. And this removing of crusts is not always the simplest matter you may attempt, unless you are awake to the fact of the very satisfactory results obtained from using $H_2 O_2$, with a small cotton mop, which mop *burn* subsequently. In conjunctivitis (cold in the eye) the "white of the eye," which is the sclerotic coat seen between the lids (the palpebral fissure), will be covered by coarse, angry-looking blood vessels pursuing tortuous courses, looking, to use a homely expression, like the criss-crossing of wild grapevines, minus the leaves and fruit. These vessels lie in the conjunctiva, and the conjunctiva being movable over the sclerotic, why the vessels will be also movable. This may be demonstrated by pushing the lower lid up and down, when the conjunctiva and vessels *in it* will move synchronously. This is *the* differential diagnostic point between conjunctivitis and inflammations of deeper structures, such as the cornea, ciliary body and iris. Take, for instance, inflammation of the iris (iritis). The redness would appear as (all the principal symptoms of conjunctivitis being also present, such as pain, photophobia and lachrymation) the rays surrounding the sun. No irregularity, as in conjunctivitis, but clean cut, as though engraved, starting from the edge of the cornea, and *are not mov-*

able on moving the lid, as in conjunctivitis. It is well to bear in mind that to make a careful examination it is necessary in many cases to instill three or four times a 4 per cent. solution of cocaine, as the photophobia is often so intense as to make it next to impossible to properly examine an eye and diagnose the condition. It is always a good thing to preface all other treatment in conjunctivitis with the instillation of a one per cent. solution of atropine, while in iritis it is *imperative*. Remember always in iritis other methods may be neglected, but atropine first, last and all the time—make other treatment accessory to this. Also bear in mind the fact of there being a rheumatic iritis which will prove stubborn and rebellious until you cure the constitutional trouble, and then you may easily clear up the eye trouble. Both in conjunctivitis and iritis the dark stall is a good thing. Boric acid, saturated solution, *ter in die*, in one drop doses dropped in the conjunctival sac, is excellent in conjunctivitis, and this may, of course, be alternated with the atropine solution. The constitutional symptoms will be treated as they may present themselves as in any case. Accompanying these conditions, and again alone, the punctum (which we spoke of in the first part of this paper) may participate—become closed—causing an overflow of tears (epiphora). While this seems a simple affair, it may be fraught with dire results; the tears becoming acrid and removing the hair from the cheek, and even going on to a very high degree of inflammation of the skin. The thing to do here is to re-establish the natural opening with a small probe, avoiding cutting, as you would destroy the sphincter in the punctum, to which it owes its sucker-like action which enables it to collect the tears. As before mentioned, these puncta are continued by the lachrymal ducts, which are very narrow, and carry the tears to the lachrymal sac; this sac is continued by the lachrymal canal, or nasal duct, which opens into the nostril between the two turbinated bones, the remainder of the canal being beneath the nasal mucous membrane on the *inner* surface of the *outer* wing of the nostril; it terminates by an orifice (sometimes two) which appear as if punched out. In the horse this canal opens on the cutaneous

surface at the entrance of the nostrils. According to Lecoq, we find in the ass and mule the opening of the lachrymal canal is at the inner surface of the outer wing, and not near the inferior commissure as in the horse.

REPORT ON SOUTHERN CATTLE FEVER.

By W. H. Harbaugh, V.S., Richmond, Va.

Read before the Virginia State Veterinary Medical Association, Richmond, Va., January 2, 1896.

During the past season I was unable to spare the time necessary to devote to any extended experiments in connection with this disease, but I did not entirely neglect the subject.

As you will, no doubt, remember, I did not question the discoveries of the Bureau in regard to the ticks causing the disease outside the permanently infected place, and further, I expressed full belief in Smith's protozool micro-organism.

For the purpose of being better qualified to study the disease and its phenomena, I confined my observations to the tick theory, and made as close a study of the ticks as possible under the circumstances.

I was peculiarly fortunate in this respect in having the assistance of Dr. Cooper Curtice, to whose studies we are indebted for a detailed life-history of the cattle tick, the *boophilus bovis*, which is, so far as known at present, the only carrier of of the cause of Texas fever.

After being able to distinguish the *boophilus bovis* from the other varieties of ticks, I made collections of them which I sent to different veterinarians outside the territory where the tick naturally exists.

The arrangement with these veterinarians was to place the young ticks hatched from the eggs of the adult ticks I sent them on a susceptible cow and report the result. Or, in other words, to repeat the experiments of the Bureau in detail.

Prof. E. P. Niles was the only veterinarian who took the

trouble to carry out the experiments as agreed upon. For one reason or another the other ticks sent out were not used.

The ticks I sent Prof. Niles were taken from cattle on a place where there has not been a case of the disease for at least seventeen years; but there have been no susceptible cattle added to the herd since then, the herd being kept up by breeding the cattle raised on the place. This course was found necessary by the owner. Before he commenced to breed all his own cattle he lost every animal introduced among his herd; about twenty cattle were sacrificed in his endeavors to add fresh blood to his herd.

Following is Prof. Niles' report of the experiments:

"Subject: A short-horn cow about 10 years old.

Oct. 10, infected with a large number of young ticks.
" 11, " " ticks. Temperature, 2 P. M., 101.2° F.
" 12, " 9 A. M., 100°
" 14, infected with ticks. " 2 P. M., 100.8°
" 15, " " " " 3 " 101.2°
" 16, " " " " 3 " 100.8°
" 17, " 5 " 100.8° [blood.
" 19, infected with ticks " 5.30 " 101.6° one pair parasites in
" 20, no more ticks placed on cow. Temp. 5.30 " 101.2°
" 21, " 3 " 101° [in blood.
" 23, " 3 " 101° number of parasites
" 25, " 2 " 103.4° no record of parasites.
" 26, intense diarrhœa. " 9 A. M., 105.7° 9 P. M., 107.4° only one pair parasites seen in blood as mount was not properly prepared.
" 27, temperature, 10 A. M., 106.2°, 6 P. M., 106.6°. Few parasites seen in blood; mount not good. Profuse diarrhœa; fæces covered with bile.
" 28, temperature, 9 A. M., 105.2°, 5 P. M., 106.4°. Number of parasites in blood; diarrhœa continues.
" 29, temperature, 12 M., 104.2°, 5.30 P. M., 104°. Great number of parasites in blood; bowels torpid.
" 30, temperature, 8.30 A. M., 101.2°, 1.30 P. M., 99.2°. Great number of parasites in blood; bowels torpid.

"Cow killed on evening of 30th in dying condition. Post-mortem examination disclosed: Spleen greatly enlarged, broken down and apparently like a mass of clotted blood when cut into. A number of petechial spots in the left ventricle of the heart. Kidneys enlarged and very dark in color. Gall bladder greatly distended with bile as described on p. 31,

Bureau of Animal Industry Report on Texas Fever. Bladder filled with very dark urine; do not know that urine was dark before death, but have every reason to suppose it was, as did not have opportunity to observe except in early stage."

At the time of the experiment, Prof. Niles sent me a specimen of the blood of the affected cow, which is now under the microscope for your inspection. It is a remarkably fine demonstration of Smith's micro-parasite.

Thus it will be seen that Prof. Niles' experiment confirms in every respect the work done by the Bureau. The work of the Bureau was followed in making this experiment, and, of course, nothing original is claimed for it. But it should remove from our minds any doubt as to the part played by the tick in at least being a carrier of the cause of the disease; and it may be the only carrier to places outside of the permanently infected sections, but I am still of opinion that there are other sources of infection within the permanently infected regions.

In the paper I read before this Association one year ago, I called your attention to the fact that all Southern ticks were not dangerous. There are different varieties of ticks that infest animals on pasture in the South, but the species called by Dr. Curtice the *boophilus bovis* is the only one which is known to inoculate cattle with the micro-parasite of Texas fever. All other varieties are at present considered harmless. I have preserved different species for your inspection.

I must also remind you that on certain farms the *boophilus bovis* ticks do not appear to be capable of conveying the disease to susceptible cattle. On two farms in particular, a short distance below this city, on which are kept between 400 and 500 cattle, and on which susceptible cattle from the North and elsewhere are constantly being added at all seasons of the year without any regard to their susceptibility, the *boophilus bovis* species is numerous, but so far as known there never has been a case of the disease since these places were under their present ownership.

The owner attaches no importance whatever to the ticks. He does not believe they have anything to do with the disease.

He has, however, his own ideas in regard to the disease and its prevention, and has perfect faith in a compound which he gives to the cattle as a preventive during the season of the year in which the disease may exist. This compound is a mixture of salt, copperas, sulphur and nitre. It certainly does not prevent the ticks infesting his places, as there are as many ticks on his cattle as are seen on any other average herd. Other farmers have used this same compound, but their cattle became affected with the disease and died, notwithstanding its use.

This compound is an ancient one in this section, and is, I believe, generally known as the old "Ruffin recipe." Next season I will test its efficacy on a suitable farm.

There can be no doubt as to the genuineness of the variety of the ticks which are on these places, as Dr. Curtice visited both farms and collected the ticks and sent them to Washington for experimental purposes, but I am sorry to say that he has informed me since that they failed to get a brood of young ticks from them. During the coming season I will make it my duty to collect ticks from such places to ascertain if their young will produce the disease elsewhere.

If it is established that ticks of the *boophilus bovis* species from such places cannot produce the disease, or, in other words, if it can be proven that on some places they are really harmless to susceptible cattle, such a fact will at least be a point in favor of the belief that the tick is an accidental carrier of the micro-parasite.

The fact that the disease is transmitted to susceptible cattle with the blood of infected animals is a point in the same direction.

Also, the fact that susceptible cattle may be infested with the ticks for several years in succession, and do not develop the disease till the second or third year, to some extent signifies that the tick is not at all times the carrier of the disease.

If the infectious principle of the tick was of the same nature as the venom of a serpent, we would not expeet to find a micro-parasite as the necessary infecting principle, but as we

must have the micro-parasite in order to establish the disease, it is evident that it is possible for the parasite to gain access to the blood of susceptible cattle by other means than either the tick or the transmission of affected blood which are, so far as known, the only authenticated ways the disease has been produced.

I have never heard it claimed that the tick originates the micro-parasite, but if we accept the proposition that the tick is the only cause of the disease it would amount to almost the same thing as a claim that the tick originated the parasite. Of course, it is possible, but scarcely probable, that the micro-parasite may be an organism peculiar to the tick, having to spend at least a part of its life within the tick in order to complete its round of existence. Such ideas are mere speculation, however, as next to nothing is known of the life-history of the micro-parasite.

One adult tick deposits an almost countless number of eggs from which as many young ticks are hatched, and as it is impossible for all of them to get on cattle a very large percentage must necessarily perish near where they were hatched and thereby liberate the parasites in large numbers. It is a question whether these parasites, on being taken into the susceptible cow with the food or water, can gain access to the blood and produce the disease. The gastric juice may guard against this source of infection, but still the question is by no means settled by the experiments of the Bureau in which they introduced the young ticks into the susceptible animals by way of the alimentary canal.

Of the greatest importance of all in connection with the study of this disease is a knowledge of the source of the protozool parasite. At present we know absolutely nothing in regard to it. It may be said that the tick gets the parasite from an animal gradually inoculated with it by being raised on a permanently infected place, but if so where does the cow get it originally? On the other hand, if the cow is made immune by the ticks where does the tick get the parasite originally? It is evident that the source of the parasite is the most important feature yet to be discovered.

Recording the effect on animals placed on tick-infested

farms was one of the lines of investigation I pursued during the past season. Some animals developed the disease after a few weeks' exposure, and other susceptible animals showed no signs of sickness although well infested with ticks, while other animals that had been on the places one, two or three years, and escaped the disease in former years when cattle on the same pasture had died with it, developed the disease and died this year.

During the past season I met with cows affected with the disease on which I could discover no ticks, and upon inquiry the owners and attendants informed me that they had seen no ticks on any of their cattle. I have visited such places a month or six weeks afterwards and found ticks on all the cattle, susceptible and non-susceptible, but found no Texas fever.

Since I have had experience in hatching young ticks I will not say that a cow has no ticks on her; I can only say that after a diligent search I did not discover any; as the young ticks just hatched have the appearance of small specks of dirt, it is impossible to recognize them on a cow till they become large enough to be distinguished.

As the tick is the carrier of the cause from the places permanently infected, it must be admitted that the disease is one that may be invariably prevented in non-infected places if sufficient precautions are taken to free the cattle from ticks. Lice, mange and seat insects are destroyed on animals, and there is no reason why ticks cannot be kept off animals.

If the disease depended solely on the presence of ticks there would be no such thing as a permanently infected place in this region. A severe winter may free a farm of all ticks.

During the early part of the fever season there were but few cases of the disease in Richmond, and it was noticed that ticks were hard to find, but during the latter part of the season the fever prevailed to a great extent, but the ticks were still noticed to be less than in former years. Last winter was an exceedingly severe one for this section, and hence the scarcity of ticks.

During next season, among other efforts to determine the

question as to whether there are means of infection other than ticks, I intend to select a farm which has been notoriously permanently infested, and adopt every possible method to keep it free from ticks and then note the effect of introducing susceptible cattle.

As to the means to be used in destroying ticks I have made no practical experiments, but it is my intention to institute experiments with the beginning of the season.

Dr. Francis, Veterinarian of the Texas Agricultural Experimental Station, publishes in Bulletin No. 24 of that institution some very practical information in regard to the methods he follows to destroy ticks on cattle. He says: "A combination of lard and sulphur or lard and kerosene gives good results." The best results obtained by him followed the use of sheep dips. He used Cannon's, Hayward's, and Little's dips, two per cent. solutions (in water). On ranges where a great number of animals are to be freed from ticks he devised an unique apparatus which he describes and illuslustrates in Bulletin No. 24. Where the number of cattle is limited the dips are applied with sponges, mops, brushes, or syringes.

I infer from reading the Bulletin that their object in destroying ticks is not to prevent Texas fever, but in order to rid the cattle of a pest, which the tick is considered to be.

When we consider the general ignorance of every particular in regard to this disease, manifested by those directly interested, the heavy losses sustained by cattle owners is not at all surprising. Very few in this section realize that murrain and Texas fever mean the same disease. In view of all the information sent out by the U. S. Agricultural Department one would think that the public should be well posted on the subject, but such is not the case. Fully ninety-five per cent. of the valuable literature published by the Government is wasted because it does not reach the persons who would make proper use of it, or if it does reach a certain percentage of them it is in a shape that is incomprehensible to them, and, consequently, is not read or studied.

There can be no doubt that if the Government would

issue a short treatise on the subject in popular language, free from technicalities, giving the common name of the disease in each locality and embracing the nature, characteristics, causes, so far as known, and the preventive measures, including the best means known of destroying ticks, more practical benefit would result than has followed the valuable work of the Bureau on this disease up to date. Such a publication should not be entrusted to Congressmen for distribution, but should be sent to postmasters and country merchants throughout the regions directly concerned for distribution to cattle owners.

During the coming year Prof. Niles and myself will be your committee on this disease, and as our work is now outlined and better understood, we hope to be able to present a report of some value to the members of the Association.

OSTEOPOROSIS.

By Dr. Geo. C. Faville, Norfolk, Va.

A Paper read before the Virginia State Veterinary Medical Association, at Richmond, January 2, 1896.

The term osteoporosis, it seems to me, is more or less a misnomer. Indicating as it does a porous condition of bone, fails to convey any accurate idea of the pathological condition found in this disease. There is upon the part of many writers a tendency to confound the disease which we commonly speak of as osteoporosis with other diseases, which may result in a porous condition of the bone. For instance, the mycelium threads of actinomycosis as they affect the maxillary bones of cattle, produce a condition which might quite readily and probably quite often is mistaken for osteoporosis, when the microscope would demonstrate at once the true nature of the disease.

I am well aware that I shall open a wide field for discussion by the position that I shall take; but discussion is what we want, and the aim of my paper is to form a groundwork for intelligent controversy.

I think that there has been a great deal of unnecessary

hair-splitting in separating this diseased condition from those other similar, and to my mind, identical diseases, osteomalacia and rachitis. I am of the opinion that it would be much nearer accurate nomenclature, to use the term rachitis to cover all the other forms constituting the so-called diseases, osteoporosis, osteomalacia, rickets, etc. The most of the literature upon this subject we find in works upon human pathology, and this is unfortunate from the fact that the human subject does not offer the field for careful pathological study that is offered when the subjects are from some of the lower orders. A multiplicity of names tends to confuse, and it seems to me that the writings of most of our authors are confused by this very cause. I think that we are warranted in assuming that the rickets of the dog or pig, and the osteoporosis of the horse are nearly enough alike in their pathology and etiology to be *generically*, at least, classed together, under the term rachitis. Prof. W. L. Williams, in a discussion of this subject, in a paper read by him before the U. S. V. M. A., held in Washington, in September, 1891, discussed this subject in a masterly manner, and I can do no better than to commend his paper to your careful consideration.

Among the writers upon human medicine it seems to be pretty well agreed that rickets is a persistence of the soft condition of the bones of the young animal, owing to a failure in the process of calcification, while osteomalacia is more a condition of age, and results in a re-softening of the bones by a process of decalcification. Among the various descriptions of osteoporosis, we find one writer describing a condition which has been described by some one else under the term rickets, and another describes as the same disease those symptoms which by some one else are described as osteomalacia. We must have something else than age upon which to base a classification. The pathological conditions noted in this disease, do not, as it seems to me, give sufficient grounds upon which to differentiate. Bilroth, in his "Surgical Pathology," in writing of predisposing causes of fractures, writes of rickets, "which is due to deficient deposit of lime salts in the bone." Again of rachitis and osteomalacia, he

emphasizes the point that rachitis is a disease peculiar to childhood, and from his description of rachitis and osteomalacia, leads one to think that his differentiation is based rather upon the age of the subject than upon the differences in pathological condition.

Williams, in his "Principles of Veterinary Surgery," classes osteoporosis as a non-inflammatory disease of bone. If he means by that a disease of bone with no symptoms of inflammation present, I do not think his classification will hold. His definition of inflammation is "a perverted nutrition of a living part, the effect of irritation or injury." Taking this definition as correct and comprehensive, the classification would perhaps hold, but it is certain that we find present in this disease those symptoms found where there is inflammation. Heat, generally with redness, pain and swelling are always met with. It would be more nearly correct to consider this disease inflammatory, the effect of a perverted nutrition.

The etiology of osteoporosis is a question of much dispute. There can be no doubt that some fault in the hygienic surroundings is the predisposing cause. Just what that fault is it is difficult to determine. We find the disease affecting young and aged animals. Horses and colts that are running on pasture with no apparent fault in the hygienic conditions, and again in stables supposed to have been constructed according to the most modern rules of sanitary science. It seems to me that there is often a constitutional diathesis, not necessarily hereditary, which predisposes to rachitic troubles. Many times without doubt, we must look to the unsanitary construction of stables for the predisposing cause, especially in those extensive outbreaks which appear at times in some portions of the country in an enzootic form. But from the fact that the disease appears in horses that are not stabled or worked, that run upon pasture or the open prairie of the West, particularly some portions of the Mississippi Valley, we cannot conclude that the unsanitary construction of stables is the only predisposing cause. I can do no better in discussing the symptomatology of this disease, than to

describe the course of a case which recently came under my care, a bay filly, one year old, standard bred. I knew this colt during her whole life. She was kept upon the place where she was foaled until she died. The place where she was raised is a small dairy farm within the city limits. The drainage is exceptionally good, the farm being nearly surrounded by tide-water, and lying as a high knoll, above high water. There are seven or eight horses kept upon the place, and all are fed and watered from the same bins and wells. The stabling is comfortable. This filly, as is a full sister one year older, was always kept in an outside box-stall, with dry floor and windows opening directly outside. During the summer she was always out during day and night, when the weather was good, on good clover pasture, with grain feed twice a day. On the third day of last April, she was led to a blacksmith shop near my office to have her feet trimmed. She was a little restless, and would pull away from the blacksmith when he began to rasp the foot. Upon giving a sudden pull, she completely dislocated the left scapulo humeral joint.

I was standing near watching the blacksmith at his work, and knew that the pull she made was a slight one, he not attempting to hold her. I at once reduced the dislocation, and with surprising ease, and in about two weeks she was as well as ever.

About the last of May, my attention was called to this filly again. She had not been doing well, and while eating as well as the other stock was not thrifty. I found a slight glairy dlscharge from both nostrils. The bones of the whole facial region seemed to be thickened, and there was marked dypsnœa, evidently from the thickened turbinated bones. At this time there was no lameness.

In about a week, the discharge from the nose had increased and respiration had become more difficult and I found her decidedly lame in the right foreleg. The next day she was lame in both fore limbs. In two or three days she was lame in the hind legs, the difficulty in front having left her. The swelling of the facial bones kept increasing until respiration became fearfully painful. Her food could be but

imperfectly masticated. The teeth seemed sore, although the gums showed no inflammation. About the middle of June she died, and I made a post mortem examination.

The only lesions I could find were in the osseous system. The superior maxillary, nasal, and turbinated bones were greatly thickened. The periosteum was easily separated, and the whole bone was soft and spongy; I could readily press a small scalpel into the substance of the bone at any point. I made an attempt to clean them by boiling. I found them so soft I could keep them in no way except in alcohol. They seemed to have completely lost their osseous character.

I found the long bones at their extremities showing the same eondition to a greater or less extent. This case in its symptoms and development was typical of the disease as I have seen it. I carefully studied the condition under which this colt was kept. The food was of the best, good hay and grass, with a daily run at pasture during good weather, and dry, well-ventilated stabling at night and during bad weather. Every attention was given her in the hopes of producing a speedy mare. I can account for this case in no way except by assuming that there was some fault with the process of assimilation. Evidently all the necessary elements for bone formation were present in the food. Other colts, the same age, kept under the same conditions and fed in the same way, are thrifty and developing nicely. The digestive functions seemed to be perfectly performed. There certainly, in this case, was not—in fact I have never known of a case where there was—anything to indicate a hereditary diathesis. Undoubtedly the material necessary for complete bone formation was present and in proper proportion for assimilation, but either are not assimilated, or, by some occult action after assimilation, are re-absorbed.

In order to get the various views of our members, I prepared a series of questions regarding this disease which I sent to each member. Several replied that they had never seen cases of this disease in their practice in this State.

The questions asked were as follows:

1st. To what extent have you observed osteoporosis in this State?

2d. What proportion of cases have been aged and what young animals?

3d. Were the animals stabled? If so, please give details as to ventilation, drainage, dampness, character of food and water. If on pasture, please state character of pasture, whether dry or marshy, and kind of grass and water.

4th. At what age have you generally seen the disease, and in your opinion what is the cause of the disease in the cases you have seen?

5th. What line of treatment do you find best?

6th. What percentage of recoveries?

7th. The uncertainty of our knowledge regarding this disease makes it more than interesting. Kindly send such information as you may have upon the peculiarities of its appearance in your locality.

Replying to these, Dr. Harbaugh says:

1st. Osteoporosis is met with in the range of my practice to a greater or less extent every year, but some seasons it appears in enzootic form, when the number of cases diagnosed increases the average to a great extent. I have only a limited knowledge of the disease elsewhere in the State, but from different persons I learn that it is by no means confined to this vicinity.

2d. According to my observations, the disease attacks old and young horses alike. In one stable where all the horses were over six years old, nine horses contracted the disease within a period of six months. In another stable, where all the animals were young, two two-year-olds and three three-year-olds were markedly diseased, and some, both older and younger, showed no symptoms whatever.

3d. In all my experience the affected animals were stabled. While it is true that some of the animals were turned out to graze or exercise during the day, and that the affected city horses were out in the air daily, at their accustomed work, still all were stabled at night.

In every instance the stable was more or less damp and lacked proper ventilation, drainage and light.

In no case could I justly find fault with food and water.

With the great majority of affected animals the food was the best that could be procured in the market, and being to a great extent what we know as Western food, it was practically the same food as fed to the thousands of non-affected animals. In the city the water is used from the hydrants, James River water, and is, according to numerous tests by competent chemists, a practically pure drinking water.

4th. I have met with the disease in animals ranging from yearlings to aged horses, but never saw a case in a mule, ass or hinny.

I am firmly convinced that the predisposing cause of the disease is undoubtedly the faulty construction of stables. The site of the stable and surroundings also have much to do with the cause. I mean to infer that the want of proper ventilation, drainage and sunlight in and about stables are the predisposing causes of osteoporosis.

I have never seen a case in a stable where the hygienic essentials received attention. That the many badly constructed stables, with little or no ventilation, do not produce the disease prove nothing; the predisposing cause is there, but the exciting cause is wanted.

As to the nature of the proximate cause, I am not at present prepared to express an opinion. In this age of microbes, one dare not say that such a disease is not due to specific micro-organisms; but I am confident that osteoporosis is not a contagious disease. All my observations point to the fact that the disease is never transmitted from one animal to another, and I am equally positive that the affected animal cannot infect a place where he is kept, either directly or indirectly.

5th. Treatment cannot possibly be satisfactory if the animal is kept in the stable where he contracted the disease. The first and essential thing to do is to remove the affected animal or animals to desirable quarters. As the conditions which predispose an animal to osteoporosis are such as produce rheumatism, I am not surprised to find rheumatism as a complication in a great majority of my cases, and hence this complication requires special attention. For the rheumatic

complication, I obtain satisfactory results from the administration of either salol and phenacetine or salicylate of soda and acetanilid. When the rheumatic symptoms are relieved, I direct my attention to the deranged functions of nutrition and assimilation. The only medical agent I use for this purpose is the precipitated phosphate of lime. It is continued for as long a time as circumstances seem to necessitate. As to food, I always prefer a mixed diet; corn, oats and bran fed as a mixture will better assume essential nutriment than either fed separately. It is scarcely necessary to remark that all food should be of the best quality.

Turning affected animals on good pasture in proper season is of undoubted benefit, but they should also have daily allowances of grain.

7th. I have not kept a record of all my cases, but I am sure that over 75 per cent of those treated have made good recoveries. Of those in which the disease is recognized in an early stage, which is always possible in enzootics, all make good recoveries when you can have the supervision of the animal until recovery is assured. In such cases, even the bones of the head, which have become perceptibly enlarged, regain to a greater or less extent their normal condition. Of course I occasionally see a case beyond hope, but, as a rule, real bad cases can be very much improved, and often become serviceable work-horses when the unsightly enlarged facial bones unfit them for pleasure purposes.

The length of time required for even a partial restoration is the great drawback when expense is considered. This feature prevents many owners from putting their affected animals under treatment, when informed of the nature of the disease, especially when the affected animals are of little value.

REMARKS.—I cannot agree with the eminent authorities who class osteoporosis as a non-inflammatory disease of the bone. The ordinary symptoms of inflammation are heat, pain, redness and swelling, and they are also the ordinary symptoms of osteoporosis.

The quantity and quality of the food and water have

nothing to do with the cause of osteoporosis directly. Food may possibly become a factor, the result of conditions; but deficiency of lime salts in water or food does not produce the disease as I find it. The food may be perfect in every respect, but as the disease is one seriously affecting the functions of nutrition and assimilation, the lime salts which the food naturally contains are not properly appropriated. Either directly or indirectly the result of the inflammatory action going on in the bones, the lime salts they contain are converted into soluble salts and re-absorbed, leaving the affected bones in the condition we find them. I am aware that this is a variation of the acid theory, but, to my mind, it accounts for the characteristic phenomena.

I do not give phosphate of lime solely for the purpose of furnishing lime salt to the bones; I give it to correct the mal-nutrition of the bones, as well as all the fluids and tissues of the body, of which it is essentially a normal constituent. In all my experience osteoporosis is confined to the horse; I have never diagnosed a case in any other animal.

It is by no means a disease of the poor man's stable. The great majority of my cases were in stables where the animals had the benefit of all that money could procure in the form of first-class food. In one stable, which was a brick structure, the horses' stalls were in the rear, the stone-paved floor of which was from seven to fifteen feet below the grade of the alley. The brick wall against the earth was always wet, and, of course, the atmosphere in that part was moist. Nine horses in the stalls ranged along this brick wall developed the disease, but no case of the disease developed among the horses that stood in stalls on the opposite side of the stable, because the windows and doors on this side were exposed to the south, which assured plenty of sunlight, and as the outside was lower than the inside, there was surface drainage; and as this row of stalls was frequently exposed to a plentiful supply of outside air, ventilation occurred naturally to some extent.

When I was called to examine an affected horse, I expressed the opinion that the structure of the stable and want

of proper hygienic conditions were the cause of the trouble. The owners took my advice, and converted the floor above into a stable, and since the horses have been kept up there no case of the disease has developed, and those among the affected which were treated recovered sufficiently to be able to do hard work for months past.

I have never been able to trace the disease to even a suspicion of a hereditary predisposition.

BONE SOFTENING.

By M. D. Hoge, Jr., M.D., Richmond, Va.

A Paper read before the Virginia State Veterinary Medical Association.

As the subjects osteoporosis and osteomalacia in animals are among the most obscure, and our society having entered upon their investigation, I have thought that a short review of kindred diseases, as observed in man, might from analogy give us some possible insight into the causes of these mysterious troubles.

Rachitis or rickets was first accurately described by an Englishman, Glisson, in 1650. It first made its appearance in England about the beginning of the seventeenth century, and even to this day it is called by the Germans die Englische krankheit, "the English disease."

The true and real cause is at present unknown, in spite of the great number of careful observations and painstaking investigations. It is, however, certain that its development is promoted by defective nourishment, unsanitary surroundings, as damp, crowded quarters in large cities, and in artificially fed children.

It has been found possible to produce the disease or certain similar changes in the bones of young animals by giving foods as free from lime as possible, and by the administration of large doses of lactic acid or small quantities of phosphorus. The changes this produced bear an analogy to rachitis or rather to bone formation, still the specific ætiological factor is wanting.

Some authorities contend that the disease bears some re-

lation to syphilis; others that it is either a peculiar form of malacia or the results of the same. It generally appears in children from two to three years of age, among the wealthy as well as the poor, and sex has no influence on its occurrence.

Rachitis is a disturbance of the normal process connected with the growth of bone. It is not that they *become* soft, but they remain soft, i.e., not ossified. We know that all the bony structures of the fœtus, except the vault of the cranium, are mapped out in hyaline cartilage. Pathologically, we find the periosteum much reddened and congested. In tearing off the periosteum small pieces of the unossified tissue adhere to it.

In normal (long) bones, at the epiphyses the proliferative layer or hyperplastic zone is sharply and distinctly separated from the osseous layer or zone of calcification. In rachitic bone the sharp boundaries are replaced by an irregular serrated edge.

The proliferation of the cartilage cells has increased beyond all bounds, and the cartilage matrix has become fibrous. There is also an extremely active new growth of blood-vessels.

The periosteum shows changes also; the inner or osteoblastic layer is thickened and the newly formed bone does not become completely calcified, but remains soft and spongy.

Hence we have swelling of the epiphyses of the long bones and thickening of the flat bones, especially those of the skull. Normal dry bone contains about 63 per cent. of lime, rachitic bones have only 20 per cent. to 30 per cent.

Experimental proof on animals shows us that when the lime salts are withdrawn from the food of ewes, the lambs suffer from rachitis. In zoological gardens, young lions and leopards also have rachitis when the bones are first cut off from the fresh meats fed to them.

To state the views again as to the causes of rachitis, most authors maintain that it is a disturbance of nutrition in which the lime salts are deficient. Kassowitz seeks to explain the cause by a pathologically increased vascularization of the

osteogenetic tissue, in which the blood-vessels are especially vulnerable by reason of deficient nutrition and toxic substances in the circulation.

In other cases, the lime salts are in abundance, but owing to a catarrhal condition of the intestines, they are not absorbed, hence do not reach the osseous tissue. According to Salkowski and Seeman, lime salts in *excess* have a similar effect, in that phosphate of lime combines with the chlorine of the blood, thereby producing a deficiency of chlorides. The result of this is a deficiency of hydrochloric acid in the stomach, and by this means the solubility and absorption of lime salts are made impossible.

We may still conceive that there exists, undiscovered as yet, in the blood a toxine which has the power of exciting in the bones the previously described methods of abnormal growth, osteomalacia.

As a rule osteomalacia, does not, like rachitis, consist of a disturbance in development of bone, but the bones having already undergone normal development and hardness, afterwards become soft. Its true ætiological factor has not yet been ascertained.

It is especially frequent along the Rhine, in Westphalia, Flanders and northern Italy. This might point to some local infection in these localities which is yet undiscovered.

Among the exciting causes, child-bearing is the most important, for the disease usually dates from pregnancy. Another factor which may be mentioned is unhygienic surroundings. The pathological process consists in a disappearance of the earthy salts of the bones, which begins usually from the medulla and extends outwards. The marrow is at first extremely hyperæmic and extravasations of blood are frequently found. The bony structure surrounding the haversian canals becomes converted into a soft, fibrous tissue; the central cavity grows larger and larger and the cortical substance becomes as thin as paper. At this stage, the hyperæmia disappears and the marrow acquires a yellow color which may be entirely transformed into a yellow viscid fluid. The bones can now be easily cut with a knife; they possess a

low specific gravity. The periosteum is at first thickened and hyperæmic, and when it is removed the underlying surface of the bone is found rough and uneven.

Chemically there is a large deficiency of lime salts, and lactic acid is found in the bones. The general condition of the patient, except for intense pain, remains good for a long time; the appetite is good and the internal organs perform their functions in a normal manner.

The excretion of phosphates in the urine is increased; lactic acid has been found. Concretions of lime are met with in the bladder and kidneys.

ASPIRATION PNEUMONIA FOLLOWING ABSCESS OF STENO'S DUCT.

By John Greer, Jr.

A Paper read before the Montreal Veterinary Medical Association.

While pneumonia in the cow is a common result of the ingestion of foreign and infected particles of food and other material into the respiratory tract, yet the present instance may be of interest not only as illustrating an unusual origin for such a disease, but as pointing the important moral that early treatment is an essential feature in any specific morbid processes in the mouths of the lower animals.

It is a well-recognized fact that there exists normally in the mouth of the lower animals, pathogenic bacteria, which, under ordinary conditions, produce no evil effects whatever, so long as the animal retains a vigorous constitution; so soon, however, as any factors succeed in lowering that vitality, the greater is the liability for bacteria to invade the general system and become truly pathogenic for their host. Such, indeed, appears to have been the condition in the case herewith cited.

The subject was a three-year-old cow, in whom an abscess developed in Steno's duct; the infection doubtless arising through the mouth after the usual manner in which such ascending affections occur. The animal's first symptoms were: falling off in the milk, which persisted for four days, when

closer examination of the body revealed a small swelling on the left cheek.

This rapidly sped downwards towards the nostril and soon infiltrated likewise the deeper tissues below the eye of that side. The lachrymal duct became obstructed, and the usual symptoms attending such a condition supervened. Further, there was considerable exophthalmous developed, the eye protruding from the socket to an abnormally great distance, and the conjunctiva was both injected and swollen. After several days the animal refused food, emaciated rapidly, while the swelling gradually increased in size. Hot fomentations were applied, with a stimulating liniment, though with little effect. This condition persisted for about three weeks; and, actimomycosis being suspected, some of the pus was removed and examined at the McGill Pathological Laboratory for the fungus, though only with negative result. The secretions of milk had almost ceased, though the condition of the animal remained about the same. At the end of about the third week, signs of fever developed, and were accompanied by chills, weakened pulse, and fœtid breath, depression and drowsiness, with diarrhœa. These symptoms progressively increased during the next three days, at the end of which time the animal died. This was nearly four weeks after the outset of the local symptoms.

The post mortem showed a large abscess in Steno's duct, containing about three ounces of yellow, creamy pus, and the surrounding tissues were softened and necrosed. Multiple abscesses were present in the lungs, and were surrounded by consolidated areas. Some of the abscesses were of long standing, in which the pus had dried up—in others the pus was fresher. In all cases the suppuration was connected with the bronchii, which in many places were dilated and thus produced bronchi-ectatic cavities. Here, then, we have a case of aspiration pneumonia, septic germs being drawn in by inspiration from the abscess in the mouth and setting up secondary abscesses in the lungs, and a consequent pneumonia.

There were no other signs of septic infection to account for the condition of the lungs, and the cause of death was

therefore wholly due to this suppurative broncho-pneumonia produced in the way above mentioned.

The case, then, is of no little importance as showing the liability to grave pneumonia where an abscess in the mouth remains neglected.

The local conditions of the mouth if long untreated renders the system liable to disease by affecting the constitution; so, that a pneumonia can with much ease follow the aspiration of septic germs. I feel sure that had the case been subjected to operative procedure earlier, the chances for such infection would have been greatly diminished, and by a proper cleansing of the mouth after operation, the animal would have made a fair recovery.

In conclusion, I beg to thank Dr. Martin McGill, of McGill Pathological Laboratory, for the kindly interest he has taken in this disease.

PROFESSIONAL ETHICS.

By J. P. LEWIS, D.V.S., Madison, Wis.

Read before the Wisconsin Society of Veterinary Graduates, Feb. 15.

Professional ethics, or the duties and rights of professional practitioners. I shall confine my remarks exclusively to the veterinary profession. I know that I can give you nothing new, but the discussion of such subjects brings us closer together, makes us know each other better, and gives us greater respect for each other's rights. I know that it is a difficult matter to draw the line where our individual rights leave off and the next man's begin. In fact, our brother practitioner generally thinks his rights begin before we consider ours to have ceased. Each of us has a certain amount of selfishness and self-esteem. As a result, we often over-estimate onrselves and under-estimate others. In our selfishness we think that all the rights belong to us, but generously feel that what we do not want the others may have. This selfishness leads to fault-finding and backbiting among ourselves, so that the public gets thoroughly disgusted with us and loses what little confidence it had in the profession.

Another injury is done the profession by one man's dis-

puting the diagnosis of another, and speaking of his treatment in a sneering way. While, strictly speaking, we may not have said anything against him, by insinuating we have injured him more than we could possibly have done in any other way.

Some people we work for become dissatisfied with us if the animal treated is not well in a few days, and, considering neither the nature of the disease nor the time required for its cure, they change doctors. The second one called puts on a wise look, examines the animal, and finding out what the first doctor said the disease was, he gives it another name. For example, if the one said it was influenza, the other will say distemper. Thus he does all in his power to build himself up at the expense of the first doctor, whom he knew to be right. Even if the first man called had made a mistake, it had been more generous in the second to have refrained from pointing out his error. We all make mistakes, and the man who expects to build up a practice by pointing out the mistakes of others will soon find that he himself is not free from like faults. What is more, he harms himself and the profession he represents. He has no right to build himself up at another's expense, and at the same time cause the public to lose confidence, not only in him, but in his profession.

As to making uniform charges, this is very difficult to do, as in some localities you can charge more than in others. I am strictly opposed to cutting prices, and also to one man offering to do certain work for less than some one else has offered to do it. Heretofore, the local, legitimate and honest veterinarians have been handicapped by a class of traveling horse doctors, or dentists, as the case may be; but the people have learned by experience that it is safer not to patronize this class. They came into town, putting out big advertisements as to their ability and knowledge, and as a result they did a great deal of work that the local veterinarian should have had. and a great deal that should not have been done. For all this, they charge two or three prices. Their patrons soon found that they had been beaten, and blamed the whole profession.

There is another class of veterinarians who use the saloons

for offices. Or if, perchance, they have offices of their own, they are favorite resorts for loafers and bums, who can always be found having a good time generally. Such as this is what causes the better class of people to form a poor opinion of both the profession and the men of that profession. One such veterinarian can do more harm than a half dozen upright men of the same profession can do good. The people are sure to hear more about such places than about the respectable offices, and they have the general opinion that all places of the same business are alike.

There is another class that harms the profession. Men of this class we call quacks. By that term I do not mean the man who has no diploma, but the man who is a graduate and depends entirely on his diploma as a guide-post to show people the great storehous of knowledge he possesses. He has not advanced one single step since he left college. In his treatment of diseases he uses only the formulas and mixtures that he learned at college. His brain is so completely filled with knowledge that it is unnecessary for him to read materia medica, or any of the late professional books or magazines. If any one dares to express a doubt as to his ability he is grossly insulted. This class of quacks is ten times worse than the most ignorant empiric, and is doing more to keep the profession from rising than all the non-graduates of the States. There is no standing still. The veterinarian either advances or goes backward. If he does not work, read and observe closely, he will soon find himself behind the times. It is a duty we owe to ourselves and to our profession to be students, to keep up with or ahead of the times, and to be gentlemen. There is no reason why the veterinarian should not be as much respected as the follower of any profession. To make ourselves and our profession recognized and respected, we must show the people that our knowledge is what it should be, and that we are students and by us working together we will advance step by step until the public see that we are standing between the diseases of our domestic animals and public health, and then we will be recognized.

VIRGINIA'S NEW VETERINARY LAW.

AN ACT

To regulate the practice of Veterinary Medicine and Surgery in the State of Virginia. Approved, Feb. 27, 1896.

1. Be it enacted by the General Assembly of Virginia, That from and after the first day of May, eighteen hundred and ninety-six, the following persons and no others shall be permitted to practice veterinary medicine or surgery in this state:

First. All persons who, prior to the first day of May, eighteen hundred and ninety-six, are practicing veterinary medicine or surgery in this State: provided, that before the first day of November, eighteen hundred and ninety-six, they shall apply in writing to the State board of veterinary examiners created by this act, and furnish satisfactory proof that they have been in practice in this State prior to the first day of May, eighteen hundred and ninety-six. The State board of veterinary examiners shall thereupon issue to such person a certificate, without fee, allowing them to continue in practice without having to undergo an examination as provided by section seven of this act.

Second. All persons who shall hereafter receive certificates from the State board of veterinary examiners of this State as provided by section seven of this act, and who shall also in all other respects have complied with the provisions of the same.

2. All persons who begin the practice of veterinary medicine or surgery in this State on or after the first day of May, eighteen hundred and ninety-six, and all persons who neglect to comply with the requirements of the first clause of section one of this act shall comply with the provisions of section seven before a certificate to practice shall be issued to them.

3. Any person shall be regarded as practicing veterinary medicine or surgery within the meaning of this act who shall profess publicly to be a veterinary surgeon and offer for practice as such, or who shall provide for sick domestic animals or for domestic animals needing medical or surgical aid, and shall charge and receive therefor money or other compensation, directly or indirectly. But nothing in this act shall apply to residents of this State who confine their practice to the castration and spaying of live stock, nor shall

it prevent any person from prescribing for live stock who does not claim to be a veterinarian or veterinary surgeon.

4. There shall be for this State a board of veterinary examiners, consisting of five members, whose term of office shall be four years, or until their successors are appointed and qualified. The term of office of the board first appointed after this act takes effect shall commence on the first day of May, eighteen hundred and ninety-six.

5. The said board shall consist of men learned in veterinary medicine and surgery, and shall be appointed by the Governor on or before the first day of May, eighteen hundred and ninety-six, and every fourth year thereafter, from a list of ten names to be recommended by the Virginia State Veterinary Medical Association every four years. Vacancies occurring in such board for unexpired terms shall be filled by the Governor by selection from the five names not appointed from the ten last recommended by the association. Such recommendation shall be by vote of a majority present at some meeting of the said association and shall be certified to the Governor by the president and secretary of said association, provided, if said association fail to make such recommendations prior to the time of appointment the Governor shall appoint such board, either in whole or in part, without regard to such recommendations. If any of said examiners shall cease to reside in the State, his office shall be deemed vacant.

6. The members of said board shall qualify by taking the usual oath of office before the county or corporation court of the county or corporation in which they respectively reside, or before the judge of such court in vacation. The officers of said board shall be a president, vice-president, and secretary (who shall also act as treasurer), said officers to be members of and selected by the board. Regular meetings of the board shall be held at such times and places as the board may prescribe, and special meetings may be held upon the call of the president and any two members, but there shall be no less than one regular meeting each year. Three members of the board shall constitute a quorum. The board may prescribe rules, regulations, and by-laws for its own proceedings and government, and for the examination by its members of candidates for the practice of veterinary medicine and surgery.

7. It shall be the duty of said board, at any of its meetings, to examine all persons making application to them who shall desire to commence the practice of veterinary medicine

or surgery in this State, and who shall not, by the provisions of this act, be exempt from such examination; and when an applicant shall have passed an examination satisfactory as to efficiency before the board in session, the president thereof shall grant to such applicant a certificate to that effect. A fee of five dollars shall be paid to said board, through such officers or members as it may designate, by each applicant before such examination is held. In case any applicant shall fail to pass a satisfactory examination he shall not be permitted to stand any further examination within the next six months thereafter, or until the next meeting of said board, nor shall he have again to pay the fee prescribed as aforesaid: provided, however, no applicant shall be rejected upon his examination on account of his adherence to any particular school of medicine or system of practice, nor on account of his views as to the method of treatment and cure of disease: and provided, further, that when, in the opinion of the president of the board, any applicant has been prevented by good cause from appearing before the board, the president of the board shall appoint a committee of three members who shall examine such applicant, and may, if they see fit, grant him a certificate, which shall have the same force and effect as though granted him by the full board.

8. The fund realized from the fees aforesaid shall be applied by the board to the payment of its expenses and to making a reasonable compensation to the president and secretary.

9. The secretary of the State board of veterinary examiners shall record in a book to be kept for such purpose the names of all practitioners of veterinary medicine or surgery in this State to whom certificates are issued allowing them to practice as provided for in this act. Said book shall be styled and recognized as the register of the practitioners of veterinary medicine and surgery in Virginia, and it shall be admissible in evidence. Said register shall be accurately kept by the secretary of said board, who shall at any time during business hours allow it to be inspected in his presence by any person interested, either at his office or at any meeting of the state board of veterinary examiners. Said secretary shall insert in said register any alteration in the name or address of any registered person which may come to his knowledge, and he shall also record the decease of any registered person as soon as he receives satisfactory proof thereof.

10. Any person who shall practice veterinary medicine

or surgery in this state in violation of the provisions of this act shall be fined not less than fifty nor more than five hundred dollars for each offence, and it shall not be lawful for him to recover by action, suit, motion, or warrant any compensation for services which may be claimed to have been rendered by him as such practitioner of veterinary medicine or surgery.

11. This act shall be in force from and after the first day of May, eighteen hundred and ninety-six.

NEW REMEDIES.

Compiled by W. V. BIESER, D.V.S., New York City.

SALANTOL.—According to Bourget, salantol is prepared by the action of acetone upon salicylic acid. Its action resembles that of salol, and is prescribed chiefly for diarrhœa.

LYCHAOL.—An extract of quiallaga saponaria, with its taste masked by appropriate substances, receives this name. It is seldom used as a medicament.

BENZACETIN.—Benzacetin, or acetamido-methyl-salicylic acid, is a white crystalline body, melting at 205° C. It is soluble in alcohol, slightly so in water. It is recommended for neuralgia.

BAYLAHUEN.—A drug consisting of the leaves and stem of a plant said to be haplopappus baylahuen of the aster family. It is recommended as a stomachic and as a remedy for diarrhœa.

SALIFEBRIN.—A compound of antifebrin (acetanilid) and salicylic acid in molecular proportions. It is a white powder with an acid reaction, insoluble in water, easily soluble in alcohol. It possesses the same therapeutic action as salipyrin.

SALACTOL.—A compound consisting of the natrium salts of salicylic and lactic acids has been introduced under this name. Dissolved in a 1 per cent. solution of hydrogen dioxide it is recommended as a local application to the throat in diphtheria.

LIGNOSULFINE.—This product is formed during the manufacture of sulpho-celluose. It contains free and combined sulphuric acid and certain volatile products of the wood. It is used chiefly as a disinfectant.

INGESTOL.—Ingestol is a feebly opalescent liquid of a lemon-yellow color, containing magnesium sulphate, sodium sulphate, sodium chloride, potassium sulphate, ether, alcohol

and iron salts. It is used in the treatment of ague and chronic stomachic troubles.

TUSSOL.—A preparation introduced under the name as a remedy for coughs is a saline compound of antipyrin and mandelic acid. Another statement is that it is a benzoic compound of antipyrin, and still another that it is hydrocyanic acid and antipyrin.

TANNIGENE—A compound of tannic acid and acetic anhydride. It is a yellowish powder, tasteless, odorless, and slightly hydroscopic. It is insoluble in cold water and dilute acids, slightly soluble in hot water or in ether, easily so in alkalies and alcohol. Used in treatment of chronic diarrhœa.

PAUCINE.—An alkaloid discovered in Merck's labaratory in the pauco nut, the fruit of the pentaclethra macrophylla, a native of the Congo region. It occurs in yellow scales, is insoluble in ether and chloroform, soluble in hot water and hot alcohol.

SALUBRIN.—Salubrin is the name given to another new remedy, the composition of which appears to be: Acetic acid, 2 per cent.; acetic ether, 25 per cent.; alcohol, 50 per cent.; water, 23 per cent. It possesses a strong antiseptic and hœmostatic action, and is used in dressing wounds and bruises.

BOROL AND CUTOL.—These bodies are aluminium boro-tartrate and boro-tannate respectively. Borol is soluble in water, cutol insoluble. The latter contains 76 per cent. of tannin, 13 per cent. of alumina, and 10 per cent. of boracic acid. They are both strongly astringent, and are designated as medicaments for dermatological use.

PARAFORM.—When form-oldehyde is heated for a certain length of time in an aqueous solution, it changes into paraform, a solid, white crystalline polymer, insoluble in water. It is used as an intestinal antiseptic. It has a strong, inhibitory action on the propagation of bacilli. One grain of para. form will sterilize 200 grains of urine.

LYSIDIN.—A basic compound obtained in the state of hydrochloride by heating ethylene diaming hydrochloride with sodium acetate. The water solution of this base is said to have a remarkable power of dissolving uric acid, and its application in the treatment of diseases arising from secretion of uric acid is being investigated. Lysidin is crystalline, of a light-red color, readily soluble in water, and possessing a peculiar taste.

ZINC SUBGALLATE.—Zinc subgallate is described as a non-

irritating, non-poisonous, odorless, non-hygroscopic, greenish-gray, neutral powder, insoluble in all ordinary solvents, unaffected by light, and containing 44 per cent. of zinc oxide and 56 per cent. of gallic acid. It is used both externally and internally. Externally it is used in eczema, fresh and septic wounds, otorrhœa, gonorrhœa, and hemorrhoids. Internally it is recommended in fermentative disorders of the intestinal tract. Externally, it is applied pure or diluted with indifferent powders or ointments.

FERRIPYRIN.—Ferripyrin is stated to be a compound of ferric chloride and antipyrin. It appears as an orange-red powder, yielding with water, in which it dissolves with facility, a dark-red solution. It is said to possess marked hæmostatic properties and to be free from any causticity, and is used either as a powder or in the form of a 20 per cent. solution. It is also administered internally.—*Chem. Gaz.*

REPORTS OF CASES.

A PARTIAL RUPTURE OF THE STOMACH AND RECOVERY.

By GEO. JOBSON, V.S., Oil City, Pa.

A pony mare, six years of age, was one of a driving team, used by a Congressman in Washington during the winter of 1894. While connected with the National Veterinary College I was called, on December 22d, to treat her for acute indigestion, with which she was suffering. The attack was very persistent, and lasted about fourteen hours before the acute symptoms subsided, and it was several weeks after before she regained her normal condition. When Congress adjourned she was taken home with the rest of the stable, and in May, 1895, after my return from college work, I was again called to treat her for the same trouble at the home of her owner. All efforts failed to relieve, and death ended her suffering. As she frequently had slight colics during the interval between the first and last attacks, some abnormality was suspected, and a post-mortem held. A complete rupture of the cardiac extremity of the stomach, about six inches in length, was discovered, and the stomach contents had escaped into the abdominal cavity, death being due to this cause. The organ was everted, and an investigation revealed traces of a former rupture, which was shown by a scar about seven inches in length running parallel to, and about half an inch to the left of the line of demarcation which separates the stomach. The ragged edges of the wound had not completely healed for about two inches in the middle of the

scar, and by a careful dissection traces of the injury were followed deep into the muscular coat. No doubt this injury occurred during the first attack, and was probably the cause of the frequent attacks of colic prior to death.

IMPERFORATE ANUS AND RECTO-VAGINAL FISTULA.

By Geo. Jobson, V.S., Oil City, Pa.

A bay filly, about twenty-four hours after birth, was noticed by the owner to make frequent attempts at defecation, but could not accomplish it. An examination by him revealed an imperforate anus, whereupon Dr. W. E. McCray was immediately called in, and he removed a circular portion of the bulging tissue over the fæcal mass, thus making an artificial anus, through which the excrementitious matters escaped. The attendant was instructed to insert a sperm candle frequently, and endeavor to keep the marginal border from uniting. But this method was ineffectual and the opening closed in several days after the operation, and it was observed that the fæcal matter was escaping by way of the vulva. The doctor made a diagnosis of rupture of the floor of the rectum. The writer was consulted, and an operation agreed upon, to rectify existing abnormalities. When the day set arrived, the filly was cast and secured, and an examination revealed a rupture of the recto-vaginal wall, about two and a half inches in length. The anal opening was enlarged, the rectum evacuated, and washed out thoroughly with warm water by means of a syringe. The ruptured portion was everted by inserting two fingers into the rectum and turning the parts out through the vulva. The ragged edges, which had healed, were cauterized with a small feathering-iron made for the purpose, the object of this treatment being to set up adhesive inflammation, which I believe can be accomplished more successfully than by scarifying, and also with more speed and less pain to the animal. Four deep interrupted silk sutures were taken, the anal opening was further enlarged, and the animal allowed to rise. The after treatment consisted in keeping the bowels open and preventing the anal aperture from closing. In time the rupture healed nicely, and the stitches were removed. At first the fæces were expelled involuntarily, but now a sphincter muscle has developed and it performs its function properly, and to-day an observer who was not acquainted with the facts would not know that an abnormality had existed.

FLATULENT COLIC, ENTEROTOMY (REPEATED SEVEN TIMES), ACUTE MECHANICAL BRONCHITIS—RECOVERY UNDER INTRA-TRACHEAL INJECTIONS OF ESSENCE OF TURPENTINE (TEREBINE.)

By M. J. TREACY, Vet., 8th Cavalry, Fort Meade, S. D.

At 4 o'clock P.M., July 24th, last, there was presented for treatment, a magnificent army mule, weighing about fourteen hundred pounds, six years old, suffering from flatulent colic. There was no history to be had (there never is, in the army.) He seemed in extreme pain, manifested by continued restlessness, kicking, laying down for an instant and jumping up again almost immediately, with eructation of gases.

He received an extravenous inject on of—

No. 1. Eserine, - - .065
Pilocarpine, - .130
Water, - - 4.

This was followed by intense pain, and great struggles, during which he broke his halter strap and escaped, trotting away with that peculiar rigidity of his spine and abdomen always seen in animals suffering from acute tympany.

At 5 o'clock he was captured, and was now very much swollen, the injection not having any results, so far as could be ascertained, excepting one slight explosive discharge. Having no antiseptics within easy access, I performed paracentesis abdominalis simply by first incising the skin, and introducing a "*bulb-trocar*" of about three-eighths of an inch in diameter and about seven inches in length (this being the sample trocar and canula issued by the War Department) into the intestines, by a blow of the hand, through the right flank. In response, there issued an immense amount of gas; as the pain continued, I injected into the trachea—

No. 2. Morphia Sulph., - .324
Water, - - 16.

which gave almost immediate relief. I am a believer in large doses of morphia, notwithstanding the strictures of a recent writer on this subject. This was followed by a draught consisting of—

No. 3. Calx chlor., - 8.
Water, - 128.

which resulted in apparent ease, and convalescence. At 6 o'clock, however, I found my patient again swollen, again punctured—relief. At 7.30 and at 9 o'clock again punctured. No. 3 prescription being administered every 3 hours (there is no choice of medicine for absorbing gases issued by the War Department.) At 4 o'clock, 25th, again called, again punctured. 7 o'clock again punctured left side—relief. 9 o'clock

again punctured left side—relief. This time the animal commenced eating hay, circulation good, looked lively, in fact I commenced to take a more hopeful view of the case, when judge of my great disappointment, when again visiting the stable, at 10.30 A.M., to find my patient with livid mucous membranes, respirations seventy-eight, weak pulse, suppressed, painful cough, auscultation revealing rhonchus, and sibilus, cold extremities, sweaty patches over body—diagnosis, acute mechanical bronchitis. Now, as warm water, hot inhalations, hot poulticing, isolation, regulated atmosphere, or in fact any of the ordinary surroundings of a sick horse in civil life are luxuries which are beyond the "pale" of a government animal, I had simply to content myself by intra-tracheal injections, three times each day, of—

Terebine, - - 4.

The improvement commenced almost at once, the pulse and respirations were both almost normal on the fourth day, and on the fourteenth day from the initial attack my patient went to duty.

I never saw an acute case of mechanical bronchitis recorded before. I was induced to use the terebine directly into the diseased part (as I might call it) by its action as a disinfectant, and its stimulative effect on the respiratory organs generally.

It must not be supposed, for one moment, that the War Department issues either eserine, pilocarpine, or terebine, or anything else, either medicines or instruments in keeping with modern times; no such reckless extravagance is ever indulged in, although an application for forty pounds of roll sulphur, or other useless stuff, would meet with an immediate and cheerful response. Under those decidedly exhilaratory surroundings, it can scarcely be a matter of wonder or surprise that the condemned and death list of army animuls, in "these piping times of peace," reaches the enormous numbers of thirteen (13) per cent. annually.

FRACTURE OF THE ZYGOMATIC BONE, ITS REMOVAL, AND RECOVERY.

By W. E. SMITH, D.V.S., Sedalia, Mo.

On the 26th of May, 1894, a fine-looking mare mule was brought to my office, being somewhat thin from hard work. Her owner gave the history of having struck her with a stone above the eye six weeks previously. I found an opening about half way from the left eye to the maxillary articulation, and also a small opening, discharging pus, just internal to the orbital process. On probing I found the

cavity directing back under the zygomatic bone. On exploring the external opening I found small pieces of bone, which seemed to be adhered, so I told the owner I would have to use the knife to make any further progress in the examination. Having secured the patient in a standing posture by the owner's apparent hypnotism, I probed and found a large cavity, and made an opening about one and a half inches long, when I discovered that the periosteum had separated and taken some of the outside of the bone with it; so I caught some of these loose pieces with my forceps, and then cut them loose. I worked forward, and finally found a fracture at the junction of the zygomatic and orbital processes. I observed the lower jaw sat over to the right, about 5-16 inch at the corner incisor teeth. I laid bare the anterior portion of the zygomatic and took hold of the loose end, and soon found it had broken loose at the temporal bone also; so I felt that I had on my hands a severe operation—to dissect the muscles away, to disarticulate the joint of the jaw, and to displace this massive bone without any skilled help, seemed to me like failure staring me in the face. I looked for the mule to break loose or throw herself, but the owner would look at me and then at the mule, and I went on as much composed as possible under such circumstances; but, to my surprise, she only lifted one front foot after the other and pulled her head from me slightly when the ligaments of the joint were severed. Considerable hæmorrhage accompanied the extraction of this bone. I washed out the cavity with creolin solution and packed it with oakum. In twenty-four hours it was taken out and washed clean and repacked; and in a few days the inferior maxilla had come back to its place and mastication became better, the wound doing nicely. She fattened and worked hard after about the first thirty days, during which she was at pasture. She made a good recovery and was sold to a mule buyer, who failed to detect anything wrong. The head filled out to its natural size, and there seemed to be a fibrous articulation formed to meet the condyles of the inferior maxilla. On examination of the extracted bone I find at the point of injury a dark spot, and under it the bone is very porous and the menisci gone, and the condyles worn where they rubbed to about 1-32 of an inch.

A VERY STRANGE CASE.

By JNO. MINCHIN, V.S., Goshen, N. Y.

On the afternoon of February 21st, while passing the residence of Supervisor Wells, I was hailed and invited to drive in, as the butcher would like to see me. I followed the man

to the barn, where I found the butcher in the act of flaying a very fine beef, yet steaming hot. He said, "I am glad we saw you pass, I have something here to show you," etc. I said, "Yes, John, that is a very nice beef." "Yes," said John, "but that's not what I want to show you, or what I can't show you, perhaps you will say." There was nothing but the contents of the abdomen removed—the heart, lungs, liver, etc., were intact—so also the bladder. The butcher wanted to know if I missed anything, but, in fact, I did not. He said, "Don't you miss the calf-bag?" (as he called it), and then I did. On inquiry about it, he told me there was none, a thing, if I had not seen for myself, would not have believed, for, indeed, there was none; not the remotest sign or vestige of a vulva, vaginal cavity, or any of the genital organs could be found. Where the vulva ought to be we found a very small orifice that would not admit of my smallest finger. But in using the probe, found the way into the bladder. On section of the urethra found everything normal. This was a four-year old heifer, never known to be in heat or "rutting," raised on the farm, and made an excellent beef. The butcher said he was in the business nearly forty years, but never saw anything like this before; and in all the obstetrical literature I have ever seen, not a single case of the kind have I ever found reported.

Question—Have you, Mr. Editor, or any of the readers of the REVIEW, heard of one?

TETANUS—ANTI-TOXINE—DEATH.

By ROSCOE R. BELL D.V.S., Brooklyn, N. Y.

The following case of tetanus is recorded—not because of any peculiarity of the disease, nor of any original observation in connection therewith, but simply to describe the use of this new serum and the phenomena of its action upon a tetanic subject. The author has no comment to make upon its failure to cure nor ameliorate the symptoms; he simply records the facts as they transpired in the description of the general characteristics of the malady in this particular patient.

On Saturday, December 28th, I was called to see a roan gelding, about eight years old, one of a team of family horses belonging to Senator-elect Peter H. McNulty, residing at Kensington, 29th Ward of Brooklyn. The patient had been driven the previous day, but showed stiffness, poor appetite, and the dribbling of saliva. When I first saw him the disease was well marked, it having the opisthotonos form, with the

membrana nictitans well protruding upon elevation of the head, and trismus so far advanced that the incisors could only be separated half an inch. Food of a sloppy nature, and water could be partaken of sparingly. He was thoroughly examined physically, and by inquiry for the presence of traumatism; but history and search revealed nothing further than a slight epidermic chafing from a saddle, which presented no peculiarities, and certainly did not impress me as being a point of infection. Under our old methods, I should have called this a case of idiopathic tetanus, but in view of modern developments we are compelled to recognize its microbic origin, and admit that the specific bacteria must have gained entrance into the organism, whether through this slight abrasion or otherwise.

I at once placed the patient in a dark box-stall, removed the chain fastenings of the other horses, and substituted them with rope, administered tartar emetic both in the drinking water, and by oral injection. The next morning I saw the owner and gave him but little hope of recovery, suggesting at the same time a trial of anti-tetanine, to which he assented. I procured from the New York Biological and Vaccinal Institute ten doses of anti-toxine, giving to the Director of that institution the above history of the case, and in the following recital of its exhibition I have followed his instructions as nearly as possible:

Sunday night, Dec. 29.—Found patient with pulse of 42, respirations 54, temperature 100°. At 8:45, administered two doses of 25 cc. each by injection into the jugular vein, and four doses of same size hypodermically along the neck, having carefully shaved the hair and bathed the skin with antiseptic solution. Before the injection had become completed the patient became excited, which was undoubtedly due to the serum, as the puncturing of the skin by the needle caused him no uneasiness. In fifteen minutes the excitement was considerable, respirations 90 per minute, and pawing with front feet. At 9:30, respirations were somewhat slower (about 75), of a paroxysmal character; pulse, 46; sweating at the flanks. I left him for the night at 10 o'clock, free from excitement, and on my return in the morning the groom reported that he had remained in that condition throughout the night.

Monday morning, Dec. 30.—Tumefaction at the point of jugular injection and one other point, while the remaining punctures showed no swelling. Pulse, 42; respirations, 64; trismus a little more pronounced than on the preceding visit,

and the general rigidity of the muscles unchanged. Injected two doses hypodermically on the opposite side of neck, with the same antiseptic precautions; excitement began during the injection, and five minutes after its completion respirations were 104; temperature, 100°; pawing slightly, kicking at belly with hind feet.

At 8 o'clock in the evening temperature was 100⅖°; pulse, 44; respirations, 60. Trismus same as in the morning. Rigidity of muscles, same.

Tuesday, 11 A.M.—Temperature, 99½°; pulse, 40; respirations, 54. Trismus not quite so well marked; incisors opening about three-quarters of an inch. A peculiar feature was first observed at this visit, which consisted in paroxysmal coughing, which was so violent that it greatly exhausted the patient. These spells would return every five minutes, ultimately ceasing. Injected one dose hypodermically, which caused very little excitement.

At 5:30 P.M. of same day pulse was 48; respirations, 84; temperature, 101°. Coughing not so severe, trismus and general rigidity about same.

Wednesday, 11 A.M.—Temperature, 100½°; respirations, 60; pulse, 48. Great difficulty and disinclination to drink, cough same as previous night, and discharge of thick, cheesy matter from nostrils. Trismus same. Patient very quiet. Can eat and drink practically nothing. Injected one dose hypodermically.

Thursday, 11 A.M.—Temperature, 101°; pulse, 60; respirations, 72. Patient very quiet. Eating and drinking nothing. Trismus about same.

Friday, 9 A.M.—Found down during night, and died at 5 A.M.

RUPTURE OF THE COLON—PERITONITIS AND DEATH.

By W. F. Derr, V.S., Wooster, O.

On April 20, 1890, I was called to examine a six-year-old bay mare, said to be suffering with colic. On arriving, the owner informed me that some three weeks before she had been kicked by another horse in the right abdominal region, and at that time had refused several meals, but had done her usual amount of work, showing only some griping pains in the right flank, for which he prescribed laxative doses of oil and small doses of bicarbonate of soda, which gave her some relief. In these attacks she would always lie on her left side, look at the right flank, would lie quietly when down, felt better as long as her bowels were in a lax condition. Such was the history the owner gave me.

The animal was lying down at this time. I took her pulse,

which was 80, weak and thready. I asked her to rise, which she did promptly and easily. As soon as on her feet, however, she cast her nose to the right flank. I now made a more careful examination; pulse, 90; temperature, 106°; respirations, 32; anxious look, visible mucous membranes of a leaden hue. On closer inspection, I found an area of about nine or ten inches in the right flank, of a hard character, which on manipulation caused her great pain. Percussion elicited a dull sound over an area of about twelve inches, pitting on pressure over the same surface. She defecated about this time, which seemed painful to her. I informed the owner that she had peritonitis, due to an injury, and that the case was hopeless. He, however, desired treatment, when I prescribed anodynes and stimulants internally, warm fomentations externally. She died during the night and a post-mortem was held in the morning, which revealed a small abscess containing about two ounces of fœtid pus in the abdominal muscles, and a transverse rupture of the colon of about five inches, which had become adherent to the abdominal walls. There was extensive inflammation of the large intestines, with great thickening of the peritoneum surrounding the injury for a space of about twelve inches. There was packed fœcal matter of a dark color, very fœtid, with an accumulation of mucous over the parts where the fœcal matter had passed through.

The case was a remarkable one to me. Why some of the fœcal matter had not made its way into the peritoneal cavity, but had packed itself against the abdominal walls, and held there until adhesions occurred, and also the animal doing more or less work for three weeks or more, seem strange to me.

PARAPLEGIA.

By Herbert S. Perley, V.S., St. Albans, Vt.

On Sunday, Nov. 20th, I was called to see a lame horse which was in a pasture about a mile from town. I found the animal, a bay gelding, seven years old, about sixteen hands high and weighing about 1,100 pounds. He was poor in flesh and had evidently seen hard times, being scarred in many places about the legs, evidently from severe duty of some kind, and with partially healed shoulder-galls.

He showed signs of extreme exhaustion, and his sides bore evidence of recent severe duty of a whip. When first seen, he stood in a natural position, with the head down, and had the appearance of sleeping. Upon being moved he walked

very slowly and dragged the hind feet along the ground, appearing unable to raise them at all.

The history of the case was as follows:

The animal had been subjected to a hard drive of about twelve miles Friday night, and had started back about 3 A.M. Saturday morning, and when about three miles from home, had stumbled, and, after going a few steps, had fallen down. Upon being urged he had raised his foreparts and remained sitting up like a dog, but was unable to rise completely. After resting for some time, he got up with help and walked a few rods, where he remained till Sunday morning, when he was brought to the pasture where I first saw him.

I did not make a very thorough examination at once, but ordered him brought to my infirmary.

I made an examination about an hour after he arrived at the hospital, and noted the following conditions:

Pulse and temperature normal, visible mucous membranes normal, but the animal showed an anæmic condition. Partial loss of power of hind limbs, the feet being dragged along the ground when the patient was compelled to walk. The tail was raised with difficulty and only about an inch or two; coldness of the hind parts posterior to the lumbar plexus. My diagnosis was either a rupture of a blood-vessel and a consequent blood clot pressing on the spinal cord, or a fracture of a vertebræ.

I put the patient on a good nourishing diet of ground oats, bran mashes, and the best of hay and carrots. Gave iron and arsenic as a tonic and alterative, and liquor strychnia and iodide of potash in large doses. Applied ammonia liniment over lumbar vertebræ and bathed the hind limbs in mustard and water. At first decided to put the animal in slings, but as he laid down often and got up without much trouble I did not do so. His appetite was good and he passed urine and fæces without aid. His temperature and pulse were taken twice a day, and at no time were they abnormal. Monday and Tuesday he was about the same, but seemed better on Wednesday, and was decidedly so on Thursday, but towards night seemed worse again. Appetite remained good and he laid down at least twice during the night. Friday morning he was worse, walked with great difficulty and had hard work to get up after lying down.

While I was out making visits in the afternoon he got down and was unable to rise. My assistant and the groom tried to get him up, but could not do so alone, so procured some more help and tried again. They had the door of the

box-stall open and in some way during their efforts the horse got partly up and staggered out of the door into the yard, where he lay unable to move.

My assistant covered him up and gave him a hypodermic of ether, and in half an hour or so the horse got up alone and walked into the stall. He was lying down when I returned, but got up and ate his feed, remaining up for an hour or so.

At 10 P.M. he was down and stretched out flat, breathing heavily and evidently in pain. Temperature was normal, but pulse slightly quickened and weak. I gave stimulants and a dose of chloral-hydrate and left him about 11:30 apparantly easy.

On going to the infirmary at 5 A.M. Saturday, I found the horse sweating profusely and evidently dying. He had been easy until about ten minutes before I came, when he had begun to thrash around and had waked up my assistant, who sleeps at the infirmary. He was in constant pain for an hour, when he died.

I had him removed at once and held a post-mortem. I was unable to make up my mind what could have caused death, and all the way to the bone-yard was trying to account for death from the symptoms presented. On making a careful examination of the lumbar region, I was unable to discover any lesion except a blood-clot, which proved my diagnosis, but did not account for so violent and sudden a death.

On examining the thoracic cavity, I found congestion of both lungs sufficient to cause death, in fact the entire lungs were affected. How this could occur and there be none of the symptoms of such a condition puzzles me. Could it be possible that the injury causing a coldness of the posterior parts was sufficient to keep the temperature down, and was there a high temperature present and not yet shown by a thermometer in the rectum? Did congestion of lungs exist all the time or only after the animal got out of the stall?

FATTY TUMORS.

By E. D. Bachman, D.V.S., Chester, N. Y.

I am not as free with my pen as I would like to be in reporting this case for the readers of the Review, and on that account will ask their indulgence.

The subject was a brown horse, some eight years old, in good health and sound working condition, except for the fact that he had for some time carried on his chest and fore quarters, and also on some parts of his neck and body, a number of tumors of various sizes, some of which having be-

come so large as to render him entirely unfit to work. As can be seen by the photo that I have had made, and which I send you, Mr. Editor, one of these tumors was in the front of the chest, extending from the lower part of the neck to under the chest and spreading sideways between both points of the shoulder. There was one on each side, on a level with the elbow, others smaller, though quite large also, and a number of small ones on the neck and on the body. These

four were of no great amount, but the first that I mentioned prevented the horse from working and had to be removed.

I did so, by dissection, as well as it could be done with the abundant superficial hœmorrhage which was present, a few large vessels requiring a ligature to control the hœmorrhages. The wounds left after the removal were very large, but healed without great difficulty—under antiseptic dress-

ing—leaving a scar of very small size, not larger than a silver dollar. The largest tumor weighed in the neighborhood of forty pounds. When cut through it seemed to be a mass of fatty matter, with now and then a cell of broken down tissue, with a thin, watery substance of a yellowish brown color.

EXTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

A SINGULAR CAUSE OF ROARING.—This case, recorded by J. A. Nunn, F.R.C.V.S. in the *Veterinary Record*, is unusually interesting on account of the peculiarity which gave rise to it. A ten-year-old Arab pony was brought to him suffering with what seemed to be strangles, though its age was against the diagnosis. The animal was put under the ordinary treatment, and after a few days a maxillary abscess was opened, giving escape to unhealthy pus and to a rusty sewing needle. A fœtid discharge with a necrotic smell kept running, and to find the cause of this the animal was thrown, an incision made on one side of the median line "from about four inches from the junction of the two branches of the lower jaw, nearly down to the larynx, where the small and great cornuœ with the anterior two-thirds of the great hyoidal branch of the right side were found necrosed." These were dissected without difficulty and removed—the great branch being cut off above the diseased part with a bone forceps. The recovery took place several weeks afterwards. It was complete with the exception that the animal is a confirmed roarer; he is, however, able to perform his work.

AN ELBOW CASE.—Mr. F. G. Ashley, F.R.C.V.S., in the *Veterinary Record*, records a case of lameness of the off fore leg in a three-year-old, which shows the importance of careful treatment with abundant doses of patience in those injuries which take place about joints which seem at first trifling, to such an extent that they are often overlooked, and which shortly afterward give rise to most alarming symptoms, not uncommonly leading to fatal termination. In this case the animal had received a wound which seemed of no importance, and, after a few days, was found very lame on the off foreleg, with every indication that the elbow was the seat of the trouble. What was the true nature of the case could

not be positively ascertained, but the presence of the wound, the discharge of synovia, the enormous swelling which followed, the immobility of the part, the great soreness of the region, the impossibility of motion or weight carrying, etc., all justified the diagnosis as well as the prognosis, which was rather unfavorable, except for the age of the patient. The treatment was long and complicated. Slings, warm fomentations, antiseptic injections of the wound, antiseptic dressings, then cold, continued irrigation, repeated blisters, were successively employed, with the satisfactory result of a good recovery.

INVERSION OF THE BLADDER IN MARES.—This condition is not as common probably in mares as it is in cows, but at the same time is met with by practitioners. Mr. H. Thompson relates three cases of some interest in the *Veterinary Record*. In the first he was successful in returning the displaced organ into its position, but did not succeed in making it remain until after three attempts, which were followed by the return of the difficulty. At last, before removing his hand from the passage, he cauterized the margin of the meatus with nitrate of silver, quickly withdrew his hand and ordered the man who held the mare to trot her sharply, while he dashed a few pailfuls of cold water under her tail. In the second case the mode of treatment was the same, but the mare died from twisted bowel. In the third, a mare while foaling had also inversion of the bladder, which was ruptured for about six inches, the urine flowing in a continuous stream. The mare was destroyed.

PURPURA HÆMORRHAGICA.—"Veteran," in the October *Veterinary Journal*, reports a case of this disease in a heavy draught horse, which shows the results observed by him with the iodine treatment. This animal presented well developed symptoms of the disease, and was placed first under chlorate of potash, which has generally been highly successful with "Veteran." But little improvement followed, and after several days, the iodine treatment by intra-tracheal injections was started, which consisted in injecting once a day for six days about four grains of iodine, the solution being made of 1 part of iodine, 2 of iodide of potash, 100 of distilled water. The author says that the "beneficial results were little short of marvellous," and recovery was from that moment assured. Considering the disease somewhat of germ nature, the author insists upon attention to hygienic surroundings, and on that account also recommends the use of iodine,

which by its germicidal and antiseptic properties, must be strongly indicated.

RUPTURED SPLEEN.--This lesion is one which has not been very often recorded, and Mr. Craik, M.R.C.V.S., reports the following interesting case in the *Veterinary Journal:* It was a bay colt, four years old, which had done its usual day's work, and was found with his head carried low down, seeming to be propped up on its four legs, leaning forward a good deal, swaying forward, and then fell to the ground. The pulse was thready, could not be counted, legs and ears deathly cold, all visible mucous membranes pale white, breathing accelerated and shallow, no sweating. The animal was evidently dying from an internal hæmorrhage. The end took place after a few hours. On post mortem large clots of blood were found. The spleen had a large ragged fissure on its capsule, which led down to the splenic pulp. All other organs were healthy.

FOREIGN BODY IN THE PHARYNX OF A DOG.—"Nemo" records a case which impresses the necessity of careful examination of the throat in small animals, showing difficulty in deglutition. An Airedale terrier exhibited the following symptoms: He was dull, held his head on one side, assuming the position of a dog suffering with canker of the ear. There was complete anorexia and difficulty in swallowing. A little glycerine was administered and immediately rejected, producing coughing and retching. The dog stood on its hind legs and violently scratched its jaws and face with its fore feet. It lay on the ground, and, putting its head between its forepaws, tore the sides of its face as if it would scratch its eyes out. Great salivation existed. Nothing could be found in the mouth or pharynx, but a second exploration was made, pulling the tongue well forward, when a thin, hard substance was detected sticking out of the very back of the tongue on the left side. This proved to be a piece of black sewing cotton and a needle. The point of the needle had pierced the tongue, and by subsequent movements of the jaw and expulsatory efforts, had been pushed into it. The cotton had been swallowed. Recovery followed immediately upon the removal of the offending body.

GERMAN REVIEW.

By W. V. BIESER, D.V.S.

THERAPEUTICAL ACTION OF CHLORIDE OF BARIUM.—The following are two cases of colic, which show conspic-

uously some undesirable, but otherwise not serious, concomitants noticeable in the attainment of the physiologico-therapeutical action of chloride of barium.

Case I.—A dark brown six-year-old stallion, after suffering from constipation, showed symptoms of most intense colic, borborygmi being almost entirely absent. After giving an intra-venous injection of barium chloride 1.0; aq. dist. 10.0, the animal contracted his upper lip, swung his tail actively, and, after severe moaning and vigorous straining, passed several hardened fæcal lumps. He was led about the yard, passing wind and fæces profusely and almost uninterruptedly for about two hours, when, owing to the prostration resulting from the profuse discharges, he was stabled.

Thereupon a muscular tremor set in, which spread itself over the entire body, but manifested itself most conspiciously in the limbs.

The skin, whose temperature seemed to be elevated, but unequally so in various regions, was covered with sweat in the region of the flanks, the pulse and respiration were markedly accelerated, the rectal temperature was elevated 0.5° C. The prostration increased hourly, attaining at midnight such a height that the animal was unable either voluntarily or with assistance to rise from the recumbent posture; at this stage the animal was wholly covered with sweat and passed semi-liquid fæces almost continuously from the anus. By morning, however, the pulse and respiration had righted themselves, the appetite had partially returned, the temperature alone remaining elevated. Upon leading the animal into the yard, a curious symptom showed itself, viz: decided foot lameness in the off fore limb; this lameness was associated with pain, as was evidenced in the face of the animal, or in the behavior of the animal when attempts were made to merely touch the foot. An examination of the hoof showed an increase of warmth appreciable by the hand, the manifestation of excruciating pain upon the gentlest tapping with a hammer, especially over the wall and the sole, stronger pulsation in the digital arteries, all denoting an inflammation of the hoof (pododerm superficialis). Associated with this was a very characteristic condition, viz: a moderately circumscribed inflammatory œdema extending from the hoof to the knee joint. This ætiologically interesting lameness, which furthermore refused to respond to the ordinary remedies, ice, vinegar, poultices, etc., lasted three days, at the end of which period all inflammatory symptoms subsided, and total recovery ensued. Four days after the colic the animal was at work again.

Case II.—A six-year-old stallion, suffering from constipation and colic, having received 10.0 gramms of barium chloride per os, developed symptoms similar to those of Case I; viz: acceleration of pulse and respiration, marked swelling of the limbs, the œdema within 24 hours extending to chest and abdomen, but disappearing again as in the former case after a few days rest, the patient during all this time having given one the impression that he had been stalled too long.

The œdema, coming on after the administration of the barium chloride and disappearing in both instances after the drug had had time to be eliminated, must therefore be traced to the action of the salt. Ætiologically considered, these inflammatory manifestations are probably the indirect results of a paralysis of both the motor and sensory nerves, which paralysis is in turn primarily produced by the marked circulatory disturbances which the drug produces, and which were so noticeable in both instances.

In conclusion, one must not let these concomitant effects of the drug detract from its value, inasmuch as they are only temporary and not serious. Regarded in the light of my experience, it is a remedy worthy of the highest praise.—*Berl. Thierarzt Woch.*

STATISTICS UPON THE TREATMENT OF COLIC WITH BARIUM CHLORIDE.—Of 51 cases of colic treated (from July 15th to August 15th, 1895) with barium chloride in Prof. D.'s clinic at Berlin, 6 died; the causes of death are such as were amenable to no therapeutic resources, viz.: either twistings or rupture of the gut.

In addition to these cases, of 163 cases treated from Aug. 15th to Dec. 31st, 1895, at the same clinic, 5 died immediately after entering the hospital, before any treatment could be resorted to; of the remaining 158 cases of acute colic, 19 were treated with sulphate of physostigmine with a mortality of 3, and a recovery of 16; the causes of death were volvulus of the jejunum and twisting of the large colon. The remaining 139 were treated with the intra-venous injection of barium chloride. I must insist that in these 139 cases of acute colic, barium chloride alone with no other adun cts was employed. Of the 139 treated only 12 died, the fatal outcome being due to the following causes; (*a*) Twisting upon its axis of the colon in 7 instances. (*b*) Volvulus of the jejunum in two instances. (*c*) Incarceration of the jejunum in an abnormal opening of the great omentum in one instance. (*d*) Incarceration of a loop of the small intestine into the foramen of

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Winslow in one instance. (*e*) Entero-peritonitis in one instance.

Hence it is evident, from these statistics that, exclusive of the cases of occlusion of the bowel which one cannot expect to yield to any therapeutic treatment, the intra-venous injection of barium chloride will cure all cases of acute colic. The determination of the proper dose in each individual case presents no difficulty after one has had any experience with the method.

An examination of the frequency and force of the submaxillary pulse is the best guide. Should the heart show weakness or the pulse be weak and frequent, one-half the dose ordinarily given should only be employed. But even here in these small doses, barium chloride affords more relief and is a better carminative than any other remedy. In calculating the dose for intra-venous injections, one must calculate it in deci-grammes, the same rule applying as in the internal administration.

With such precautions in mind, the barium chloride treatment was inaugurated at D.'s clinic; no case of poisoning from the remedy has as yet materialized.—*Berl. Thierarzt Woch.*

THE FUNCTION OF THE MUSCULAR COAT OF THE BLADDER IN NORMAL MICTURITION.—G., in an experimental research, found that the vertical orifice of the bladder is normally opened by contraction of the unstriated muscular tunic, and that the contraction of this muscle is necessary to the expulsion of the urine. The contraction of the abdominal muscles may aid in this action, but it is not indispensable, and cannot replace it.

Although volition seems to be directly concerned in the act of micturition, it acts rather by causing, through a psychic act, reflex contraction of the muscular coat of the bladder. Ordinarily, the contraction of the muscular coat is the result of a reflex having its point of departure in a special sensibility of the bladder to tension, the two properties of the bladder, contractility and sensibility, being intimately related, and being manifested in perfect accord in the physiological activity of the viscus.—*Wochenschrift.*

PROFESSIONAL HONORS.—Prof. Nocard, of Alfort, has been nominated honorary member of the Royal Society of Agriculture of England, and also honorary member of the Hungarian Society of Hygiene.

SOCIETY MEETINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

This Association was called to order by President John R. Hart, Tuesday, February 11, at 8:30 P. M. The members present were: Drs. Eves Hoskins, Hart, Lintz, McClellan, Rhoads and McAnulty. The visitors were: Thomas B. Raynor, F. S. Allen, J. O. George, J. C. McBirney, B. M. Underhill and some students from the Veterinary Department of the University of Pennsylvania.

Dr. Hoskins gave a very encouraging report of the bill endorsed by the Association at the previous meeting, and earnestly solicited the continued work of all veterinarians for this measure.

It was announced that the State Board of Veterinary Medical Examiners will meet in Philadelphia, April 20 and 21, for the purpose of giving examinations.

Dr. Eves gave a very interesting talk, during which he brought out many good points regarding legislation, also freely discussing many diseases with which they had to contend, among which were tuberculosis, anthrax, hydrophobia, ringworm in cattle, tetanus, menengitis, hog cholera, œstris bovis and contagious abortion. He said they had condemned about 200 cattle out of 1,100 examined for tuberculosis, and the post-mortems held on 90 per cent. of them had always proven the correctness of their diagnoses. The tuberculin used is that made by Prof. Chester at the Delaware Experiment Station, and they found it equal to Koch's. They take the temperature for two days before and one day after making injections, and all cattle showing a reaction of one to one and a half degrees are condemned. They have fifty to sixty fatal cases of anthrax annually. This is found principally on the salt meadows, and is traceable to the infected districts of New Jersey, being brought to Delaware by the flood tides. They have inoculated 850 cases and returned them to the infected district, with a loss of but two, eight and six weeks respectively after their return. They use in each case 0.3 c.c. of virus of three grades: No. 1 kills white mice invariably, and nothing else; No. 2 kills white mice and guinea-pigs in 60 per cent. of all cases; No. 3 kills guinea-pigs invariably, but has never as yet killed a rabbit. They have an appropriation of $500 for burying cattle having died with anthrax. They have tested fourteen cases of glanders at

Middletown with mallein without reaction. He spoke of a mare having a discharge from nostrils for three years suddenly becoming worse, and upon the mallein test gave re a-tion of 103 3-10 degrees, and destroyed and diagnosis proven. Myotic enteritis, in some cases supposed to be caused by feeding decaying turnips, disappeared when the feeding of the turnips was stopped; yet cattle at the experiment station fed on these turnips became fat. The chemist upon examination failed to find any chemical poison. The ringworm in cattle has been traced to the importation of York State calves, and if taken early yields nicely to external applications of tincture of iodine. Tetanus is not nearly so prevalent as it was two years ago. The tetanine used is manufactured at the Pasteur Institute. He also spoke of hog cholera, œstris bovis, contagious abortion (which they treat very successfully with hypodermic injections of carbolic acid), and menengitis, which has caused a loss of five to six thousand horses within the last ten years. This they suppose is due to ptomaines produced by the death of a fungus. Though they have fed food from the infected stables and have grown cultures from all the fungus found around the premises and fed the pure cultures to young horses, they have failed to produce the disease in a single case.

Mr. McBirney exhibited two very interesting specimens, one being a section of pancreas from an ox; it consisted of a large duct filled with small white granules, resembling homeopathic pills, about four ounces. The other was a honeycombed piece of carbonate of lime, two by two and a half inches, taken from the brisket of an ox. Each of these animals was in good condition.

Dr. McAnulty and Dr. McClellan each reported the recovery of a mule from menengitis.

Dr. B. M. Underhill reported a case of rabies in a chestnut gelding, nine years old. The symptoms were first noted on Sunday, he became very violent by Tuesday, the constant movement of the jaws causing a frothy saliva to exude from the lips. He was destroyed with a rifle Tuesday at noon.

Dr. Eves reported the successsful treatment of a dog and a horse that had been bitten by a rabid dog, with Pasteur's virus.

Dr. McBirney cited a case of rabies in a two-year-old colt that had been bitten by a wolf.

After extending a vote of thanks to those who gave

papers or reports, the Association adjourned to meet again March 10, 1896. W. L. RHOADS, *Secretary.*

[NOTE.—The minutes of the March meeting of the Keystone Veterinary Medical Association have been received from Secretary Rhoads, but their publication is necessarily deferred until the May REVIEW.]

VETERINARY MEDICAL ASSOCIATION OF NEW YORK COUNTY.

The regular meeting of the Veterinary Medical Association of New York County was held on March 3, 1896, at 9 o'clock P.M., with the President, Dr. Huidekoper, in the chair. On roll call the following members responded: Drs. Amling, Bretherton, C. C. Cattanach, J. S. Cattanach, Caulfield, Delaney, Ellis, Ferster, Farley, Foy, Giffen, Gill, Huidekoper, Hanson, Hueppe, Jackson, Loomis, Lamkin, Lellman, MacKellar, Neher, O'Shea, Parsons, Ryder and Turner (25).

Board of Censors: Dr. Gill, Chairman, reported that on account of Dr. Johnson's inability to be present at the meeting of the Board, that they had concluded to postpone action on his case until the next meeting, and that in the case of Turner and Finley, the Board decided to give the parties in the case until the next meeting to produce the court records, when, if they were not produced, the case would be dropped. In the case of H. Clay Glover, for violation of the code of ethics, the Board decided to postpone his case (he being out of the city) until the next meeting.

Papers.—Dr. Lellman then read a paper on "Demodex Folliculorum and Herpes in the Dog and Leukemia in the Cat."

Reports of Committees.—Dr. O'Shea, Chairman of the Committee on Legislation, reported that the jury bill was doing nicely, and that the committee had received word from the Committee on Legislation of the N. Y. S. V. M. A. to the effect that an amendment had been made to the bill introduced by Mr. C. C. Cole, of Syracuse, allowing any graduate of a veterinary school who received his degree prior to July, 1895, to register, provided he had practiced veterinary medicine in some county in the State, even though he had failed to register in his own county; and that the Committee on Legislation of the County Association suggested that the applicant, in bill referred to, be asked to pay ten dollars on presenting his application to register.

The committee also suggested that they be empowered to have drawn up a bill requiring that all meat and milk inspectors in the State be graduates from veterinary schools.

Moved and seconded that the report be accepted and the committee empowered to act. Carried.

Moved and seconded that the president appoint a committee

of three to frame resolutions to the Fire, Police, Street Cleaning and Charities and Corrections Departments, to the effect that they employ only graduates of veterinary colleges in the treatment of their stock. Carried.

This was also embodied in the work of the Committee on Legislation.

Committee on securing room at the Academy of Medicine, Dr. Hanson, Chairman, reported that a comfortable room with seating capacity for about forty people could be had for ten dollars a month. After some discussion it was moved and seconded that the Association take the room. An amendment to the motion was offered to the effect that a committee be appointed to investigate the financial condition of the Association before taking a decided step in reference to securing the room.

The amendment was put before the meeting and lost.

The motion was then put before the meeting and carried.

It was then moved and seconded that the committee be empowered to hire the room for the next meeting. Carried.

Moved by Dr. Hanson, and seconded by Dr. Neher, that a vote of thanks be extended to Dr. Gill and the members of the faculty of the N. Y. C. V. S. for their hospitality in allowing the Association the use of their rooms in the past. Carried.

Moved and seconded that the meeting adjourn. Carried.

ROBT. W. ELLIS, D.V.S., *Sec.*

MASSACHUSETTS VETERINARY ASSOCIATION.

A meeting of this Association was held at 19 Boylston Place, Boston, January 21st, with a good attendance.

Drs. Langdon, Frothingham, of Boston, and A. Lannon, of Malden, were elected members. The application of Dr. J. Marshall was received.

Dr. Parker read a paper on "Milk as a Factor in the Causation of Disease,"* and a general discussion followed, in which Drs. Cooper Curtice, Osgood, Burr and McLaughlin took part.

HOWARD P. ROGERS, *Sec.*

WISCONSIN SOCIETY OF VETERINARY GRADUATES.

The annual meeting of this Society was held in Madison, at the City Hall, Wednesday, February 5, 1896.

The meeting was called to order by the President, Dr. J. P. Laws, at 1:45 P.M. The roll was called, and the following members responded: W. G. Clark, J. R. Kelso, J. P. Laws, G. Ed.

* Will be published next month.

Leech, E. L. Morgenroth, E. H. Newton, C. H. Ormond and J. F. Roub. Visitors: Drs. G. H. Fay, A. H. Hartwig, B. L. Clarke and Walter Pick. The minutes of the last meeting were read and approved.

The President in his report gave a brief history of the Association from the time of organization to the present date, which was interesting and instructive. The Secretary's report of accounts was read and accepted. The Treasurer's report was read and accepted.

Dr. S. G. Binger, of Browntoan, Green County, was expelled from the Association under charges preferred against him at the last annual meeting.

Dr. Roub read a letter from Dr. Schmidt stating that he had fractured his hip and could not be present. On motion, the sympathy of the Society was tendered Dr. Schmidt.

Moved by Dr. Leech, and seconded by Dr. Roub, that a resolution of regret in regard to Dr. Brauchle's death be spread upon the minutes. Carried.

Applications for membership: Dr. G. H. Fay, Ripon (C.V.C. '93), Dr. A. H. Hartwig, Watertown (C.V.C. '95), Dr. B. L. Clarke, Monticello (C.V.C. '95).

A short recess was taken while the censors considered the applications. The censors reported favorably on the applications, and it was moved and seconded that they be elected to membership. Carried.

The Committee on Legislation reported in regard to the bill to regulate the practice of veterinary medicine and surgery, which was before the Senate at the last session. The committee was unable to bring sufficient influence to bear to secure the passage of the bill. On motion the report was accepted and the committee discharged.

On motion, the Society proceeded to the election of officers for the ensuing year. The following gentlemen were elected:

President, Dr. G. Ed. Leech, Milwaukee; Vice-President, Dr. C. H. Ormond, Milwaukee; Secretary, Dr. W. G. Clark, Beaver Dam; Treasurer, Dr. J. P. Laws, Madison; Censors: Drs. A. H. Hartwig, Watertown; Dr. B. L. Clarke, Monticello, and Dr. E. H. Newton, Waupun.

Moved by Dr. Leech, and seconded by Dr. Kelso, that the Society revert to new business. Carried.

On motion, the Secretary was instructed to inform the Society of members who have not qualified, and have been elected members of the Society. The following names were read and voted

upon separately, and dropped from the roll of the Society: Drs. F. E. Stone, S. W. Mount, J. L. Kearney and I. Philip.

Moved and seconded that inspectors of the Bureau of Animal Industry be invited to attend and take part in the Association meetings.

On motion the Society adjourned until 7:30 P.M.

Meeting called to order by the President at 7:30 P.M.

The question of legislation was discussed, and it was decided to appoint a committee to draft a bill, and present it before the Society at the semi-annual meeting. Drs. Leech, Clark and Law were appointed as a committee on legislation.

On motion, the subject of army veterinary legislation was referred to the Committee on Legislation.

Dr. Leech introduced a resolution requesting that the Association adopt, at the next meeting, as a part of its code of ethics, the following: "It shall be deemed a violation of the code of ethics for any member of this Association to contract with, or through the officers of any live stock insurance company, for the professional treatment of the members' stock so insured, but this rule shall not prevent any member from becoming the examiner of risks, and to act in the capacity of expert for the same." On motion, this was laid over until the next meeting.

The reading of essays being next in order, the following papers were read: "Shoeing," Dr. E. L. Morgenroth;* "Scientific Breeding," Dr. J. R. Kelso;* "Equine Relapsing Fever," Dr. T. W. Watson;* "Veterinary Meat Inspection by the State and Its Necessity," Dr. G. Ed. Leech;* "Professional Ethics," Dr. J. P. Laws.†

The essays were well prepared, and brought out interesting discussion. Dr. Watson was unable to attend and his essay was read by the Secretary.

On motion, it was decided to hold the semi-annual meeting at Milwaukee, subject to the call of the Secretary.

Moved and seconded that the balance of the special assessment remaining unpaid be remitted. Adjourned.

W. G. CLARK, M.D.C., *Sec.*

PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION.

This Association assembled in Odd Fellows' Temple, corner of Broad and Cherry streets, March 3, and was called to order at 10:30 A. M., President Dr. Leonard Pearson in the chair.

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* Will be published in the May REVIEW.

† Printed elsewhere in this issue.

At roll-call the following members responded: Doctors Adams, Allen, Benner, Bridge, Butterfield, Castor, Collins, Conard, Diemer, Farley, Fitzpatrick, J. C. Foelker, Goentner, Harger, John R. Hart, Hoffman, Hoskins, Houldsworth, Keller, Keil, Kooker, Larzelere, Lintz, Lusson, McAnulty, McClellan, Miller, Noack, Pearson, G. B. Rayner, T. B. Rayner, James B. Rayner, John B. Rayner, Rechtenwald, Rhoads, Ridge, Sallinger, Stanton, Williams and Zuill. Visitors, Dr. H. P. Eves, of Deleware, and a number of students from the Veterinary Department of the University of Pennsylvania.

The President then delivered his annual address, being a brief review of the progress our profession has experienced during the past year; the domain of the veterinarian; that the value of expert veterinary advice was insufficiently appreciated, through the lack of opportunities to draw upon the knowledge and skill of veterinarians, etc., because he has specialized to such an extent upon the diseases of the horse that his broader domain is not sufficiently recognized; spoke upon the growing importance of meat, milk and dairy inspection, etc.

The chair then annonnced that nominations for officers to serve for the ensuing year was now in order, when the following nominations were made: President, Dr. W. H. Ridge; First-Vice President, Dr. James B. Raynor; Second Vice-President, Dr. J. T. McAnulty; Third Vice-President, Dr. J. T. Farley; Treasurer, Dr. Jno. R. Hart; Recording Secretary, Dr. W. G. Benner; Corresponding Secretary, Dr. F. S. Allen. Board of Censors: Doctors S. J. J. Harger, W. L. Zuill, W. H. Hoskins, J. C. McNeil, T. B. Rayner, F. Bridge, M. E. Conard, Jacob Helmer, J. W. Sallade, Otto Noack and F. S. Allen.

A motion prevailed that the Secretary cast the ballot for nominees where there was no opposing candidate, which carried.

Drs. W. S. Kooker and James B. Rayner were appointed tellers.

The election was proceeded with, and the tellers reported the following: Censors—Harger, 21 votes; Zuill, 16 votes; T. B. Rayner, 14 votes; Bridge, 5 votes; Conard, 13 votes; McNeil, 16 votes; Helmer, 4 votes; Sallade, 9 votes; Hoskins, 22 votes; Noack, 3 votes; Allen, 1 vote.

The President thereupon announced the elected officers for the ensuing year: President, Dr. W. H. Ridge; First Vice-President, James B. Rayner; Second Vice-President, J. T. McAnulty; Third Vice-President, J. T. Farley; Treasurer, Jno. R. Hart; Recording Secretary, W. G. Benner; Corresponding Sec-

retary, F. S. Allen. Board of Censors—S. J. J. Harger, W. L. Zuill, W. H. Hoskins, J. C. McNeil and T. B. Rayner.

Corresponding Secretary Allen then read the following applications for membership: Drs. George Jobson, Charles Falconer and A. O. Cawley.

Drs. McNeil and Timberman, of the Board of Censors, being absent, the chair appointed Drs. James B. Rayner and W. S. Kooker to fill the vacancies.

A recess of fifteen minutes was then taken, that the Board of Censors might examine the applications for membership. The Board being ready to report, the Chairman restored order and offered a favorable recommendation of Drs. Jobson, Cawley and Falconer.

A motion prevailed that each applicant shall be elected by acclamation, which was so conducted, and they were elected members of the P. S. V. M. Association.

Dr. Jobson being present, was introduced by the President, who with a few well chosen remarks thanked the Association for the honor conferred.

The Corresponding Secretary then made his report, which was received. Upon motion, was ordered to be filed.*

Dr. Hoskins eulogized upon the death of one of our members and colaborateurs, Dr. Wm. U. Custer, of Reading, Pa., and moved that a committee on resolutions be appointed to draft suitable resolutions. The motion carried, and the chair appointed Drs. W. H. Hoskins, T. B. Rayner and Otto Noack.

Dr. John R. Hart was then called upon for a report as to the condition of the treasury, which was responded to as follows:

TREASURER'S REPORT OF PENNSYLVANIA STATE VETERINARY MEDICAL ASSOCIATION FOR SESSION OF 1895 AND 1896.

Cr.

March 5, 1895	Balance in treasury	$78.53
	Received from Dr. F. S. Allen, Secretary, as membership fees and dues	207.00
	Received by Treasurer as membership fees and dues	23.00
	Total	$308.53

Dr.

March 5, 1895		For printing letter-heads	$4.45
" 6	"	—For stationery and stamps, Secretary	8.80
" 6	"	—For 1,000 letter-heads	2.00
" 6	"	—For printing programmes, letters and circulars	10.00
" 6	"	—For rent of hall, College of Physicians	20.00
Sept. 3	"	—For letter-heads, certificates, stamps, to Secretary	16.01

*Will be printed in full in May REVIEW.

Oct. 28, 1895	—For circulars, postals and programmes	7.75	
" " "	—To Dr. W. H. Hoskins for expenses to Dr. J. S. S. Harger	13.00	
" " "	—To Dr. W. H. Hoskins, expenses of Legislative Committee	75.00	
Feb. 10, 1896	—To Dr. Allen, Secretary, stamps, stationery and typewriting	19.99	
	Total expenditures		$177.00
March 3 "	—To balance in treasury		131.53
" " "	—Members not qualified		$133.00
" " "	—Due by members as dues		358.00
" " "	—Extra assessments		22.00
	Total		$513.00

While this is a large amount of money on the debtor side of the book, it is 32 per cent. less of an increase than the debt reported at the session of 1895. The increase in membership is 15 per cent. less than reported in the session of 1895.

The Association has a membership of 130. The collection by the Secretary for the session of 1896 has been 60 per cent. above the collections made at the session of 1895.

I would recommend that the Board of Censors go over the Treasurer's report of delinquent members and take some action as to the best method to collect the Association's indebtedness.

Respectfully submitted,

JOHN R. HART, Treasurer.

W. L. ZUILL,
S. J. J. HARGER,
JOHN T. FARLEY, } Auditors.

Moved and seconded that a committee of three be appointed to audit the accounts. The chair appointed Drs. Zuill, Harger and Farley, who afterwards reported that they had examined the accounts and found them correct.

Under the heading of unfinished business, the Committee on Resolutions reported that they had forwarded a letter to Mr. Woodring, of Northampton County, but that it had not been acknowledged. The report was received and the committee discharged. Dr. Hoskins also reported the continued illness of Dr. Weber, of Lancaster, that he was still unable to attend to his duties, that the contribution of the last meeting, which amounted to about $26, was gratefully acknowledged, and that he had been removed from the hospital to the country, where he was being kindly cared for by a farmer and former client.

Dr. Harger reported the membership certificate of Dr. Williams in his possession, which was placed on the table for disposal. The chair appointed Drs. Zuill, Harger, and Kooker to investigate, with power to act.

Under the new business, Drs. Ridge and Zuill offered the following resolution:

Resolved, That Art. VII., Sec. 1, shall be altered to read: These By-Laws may be altered or amended by two-thirds of the members present at the annual meet-

ing, provided the said alteration or amendment has been proposed in writing at a previous meeting by two members, and any article or section of these By-Laws may be suspended during a single meeting by the unanimous consent of the members present, except the suspension be to vote on the alteration or amendment of the By-Laws. W. H. RIDGE, W. L. ZUILL.

Discussion followed as to the best method to be employed to collect initiation fees and dues.

Dr. Hoskins moved that the Secretary comply with the report and recommendations of the Treasurer.

After considerable discussion, in which several participated, the motion carried.

At this stage, 1:15 P.M., a motion to adjourn for luncheon was entertained, after which all present soared to higher realms, where, through the generosity of the Philadelphia members, a bounteous repast had been provided.

AFTERNOON SESSION

was called to order by the President, Dr. Pearson.

Dr. Hoskins called up the amendment to Article V., Sec. 20, By-Laws.

Dr. Ridge favored adhering to the old rule.

Dr. Hoskins thought we had given the members ample and fair trial; that inasmuch as the members didn't respond to the Secretary's letters, while sharing the profits, he wanted the amendment enforced.

Dr. Zuill considered the action taken at the last meeting illegal, on account of the absence of a quorum; but the chair decided that the meeting was regularly called, therefore the action was legal. Dr. Zuill appealed from the decision, but the Association upheld the chair by a rising vote.

Dr. Stanton favored something more stimulating, in a literary way, to the delinquents.

Dr. Goentner considered it unfair to expel a member on account of absence at three consecutive meetings, as long as his dues remained paid, as some might be unable to attend through inability to procure a substitute.

Dr. Rechtenwalt said he would be compelled to resign if the amendment was enforced.

Dr. Hoskins thought it would be an incentive to better attendance.

Dr. Harger considered coercion to attendance a bad incentive, that the adoption of such an amendment was equal to a punishment for a personal transgression.

Dr. Zuill thought it unconstitutional, that if a member pays his dues, he is a member, and cannot be compelled to attend.

The question was finally decided by a rising vote—12 for and 16 against.

Dr. Kooker then moved that Article V., Sec. 2, be stricken from the By-Laws, which was carried as a resolution by Drs. Kooker, Zuill and Harger.

It was moved and seconded that the Association listen to report by Dr. Hoskins on the work done by the veterinary medical examiners for the State of Pennsylvania.

Discusssion followed by Drs. Zuill, Hoskins, and Rechtenwalt on the matter of false registration, examination of applicants by the Board of Examiners, insufficient remuneration for examiners' etc.

Report was accepted and ordered filed.

It was moved and seconded that the Association give the Committee on Legislation proper support in introducing and securing the passing of amendment to the Veterinary Examiners, Act favoring an increase of compensation.

The Committee on Sanitary Science and Police, owing to the absence of the chairman, Dr. Adams, was postponed until the second day's session.

General discussion on the subject of tuberculosis of cattle was in order and was opened by Dr. Pearson. He spoke on the work done by the State Live Stock Sanitary Board, the plan for procedure adopted for the present, etc. Further discussed by Drs. Bridge, Conard, Jobson, Eves, Noack, Miller.

Dr. Pearson, upon inquiry by Dr. Johnson, answered that the sanitary measures adopted to prevent the extension of the disease after once tested with tuberculin, was through cleansing with soap and hot water, afterwards spraying with a 1-1000 solution of bichloride of mercury, with the addition of sunlight and ventilation.

Dr Zuill again claimed tuberculin not infallible, as it would give reactions in diseases different from tuberculosis.

Dr. Hoskins thought that the dairymen ought to be more careful as to personal cleanliness.

Dr. Miller favored regular systematic cleaning, with sunlight and ventilation and regular exercise.

Dr. Eves believed in dairy as well as milk inspection, where the former is inadmissable.

It was moved and seconded that the discussion close. Carried. The meeting then adjourned at 5:10 P.M., and this closed the first day's session.

SECOND DAY'S SESSION.

Called to order at 10:15 A.M. by President Pearson, with the

following present at roll call: Drs. Allen, Benner, Collins, Conard, Felton, Fœlker, George, Goentner, Good, Hart, Harger, Hartman, Helmer, Houldsworth, Keely, Knight, Keil, Kooker, Larzelere, Lintz, Lusson, McAnulty, McClellan, Michener, Miller, Moyer, Nicholson, Oyler, Pearson, G. B. Rayner, T. B. Rayner, Jas. B. Rayner, John B. Rayner, Rechtenwalt, Reinhart, Rhoads, Ridge, Ross, Schreiner, Senseman, Stanton, Timberman, Turner, Williams, Zuill.

The President called upon the chairman of Committee on Sanitary Science and Police for their report, to which Dr. Conard responded, he reporting outbreaks of glanders, tuberculosis, hog cholera, the usual influenza, strangles and epizootic abortion, which he considers the cause of more loss to dairymen than that of tuberculosis.

Report of committee was received and ordered filed, and the committee discharged.

Report of Committee on Legislation by Dr. Hoskins then followed. Report was accepted, upon motion, and ordered filed, and committee discharged.

It was moved by Dr. Kooker, and seconded by Dr. T. B. Rayner, that a vote of thanks be tendered Dr. Hoskins for his valuable services rendered in the interest of the profession, which was carried unanimously by a rising vote. Dr. Hoskins in a few well-chosen remarks thankfully accepted the offering.

The discussion that followed was participated in by Drs. Goentner, Conard, Harger, Zuill, Rechtenwalt, Michener, Jobson and Hoskins.

Dr. Hoskins spoke upon the measures adopted for the prevention and spread of abortion by local irrigation through the means of overhead tanks filled with bichloride of mercury solution, also injection of carbolic acid solutions.

Dr. Goentner had used vaginal injections of antiseptics and fumigations, and had not had a recurrence; he believed in the injection of one to two ounces of a 2 per cent. solution of carbolic acid; after a second injection he has not had abortion.

Dr. Conard knew cases where herds have been inoculated by the male during coition.

Dr. Harger favored an injection of a 2 per cent. solution of carbolic acid, five injections, one every two weeks.

Dr. Zuill said that carbolic acid was effectually used in England about two years ago.

Dr. Conard asked whether an abortion by injury could form a nucleus for the spread of the disease. His manner of treatment

was almost similar to Dr. Harger's; he uses 2½ per cent. solutions and makes about six injections, never had a case following the second injection, with two exceptions.

Dehorning was spoken of as a factor in the production of abortion. Dr. Conard favored dehorning as it will lessen the trouble. Dr. Michener said it would run its course, but he believes in disinfection; we should not claim too much for the injection of carbolic acid solutions. The discussion was then closed.

Next in order was the reading of essays and communications. Paper on the "Pleasure of Being a Veterinarian," by Dr. J. C. Michener; Dr. J. B. Rayner on "Osteoporosis"; "Pathogenesis and Development of Disease," by Dr. W. L. Rhoads.*

The papers abounded with valuable suggestions and were enjoyed by all present.

Dr. Zuill being called upon for his description of the operation of "cunean tenotomy," responded; he believes in removing as much of the tendon as possible through about an inch and a half long vertical incision; by that method he cures about 90 per cent., about 5 per cent. partially; where there is no ulceration of the articular surfaces, cure is almost certain; if it does not cure it does not alter the action or function of the part.

Dr. Harger gave a description of the operation of median neurectomy; after briefly reviewing the anatomy of the part, he spoke of the patients who would be benefited by the operation, also spoke of the danger and results following the operation.

Dr. Pearson spoke on the use of barium chloride as a prompt cathartic by intravenous injection; he uses about sixteen grains to two drachms of distilled water.

Papers and description of operations discussed by Drs. Kooker, Hoskins, Michener Lusson, Conard, Williams, Goentner, Miller, Ridge, Rechtenwalt, Helmer, Harger and Eves.

The essays, communications and descriptions of operations were, to say the least, exceedingly edifying and enjoyed by all present.

Dr. C. H. Magill handed in his resignation as a member of the P. S. V. M. Association. Dr. Hoskins moved that it be laid over until the next meeting. Carried.

Dr. Wm. Atkinson, editor and publisher of "The Public Health," asked for the proceedings of this meeting which, upon motion, were ordered to be furnished.

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*These papers will be published in the REVIEW as soon as possible.

Dr. Hoskins, Chairman of the Committee on Resolutions, then offered the following which were adopted:

We, your committee, have had placed before us the Army Bill as at present pending before Congress, [Bill read.] We believe that this measure is a much needed one and we most heartily recommend that this Association indorse this measure and urge upon its members the most earnest support to insure its passage.

WHEREAS, It has pleased Almighty God in His wise dispensation to remove from our midst our late member, Dr. W. U. Custer, be it

Resolved, That while we bow humbly to His will, we feel keenly the loss that has fallen to our lot, for in our late member we had one devoted to his calling, an earnest member of this organization, and a man honored and respected by the whole community in which he resided; and further be it

Resolved, That a copy of these resolutions be spread upon the minutes of our Association, a copy sent to the family of the deceased, and to the several veterinary journals.

WHEREAS, A number of diseases afflict the domestic animals of this State that have never received the careful scientific study that is necessary to discover their causes and the methods to be employed in preventing and treating them, and especially so-called cerebro-spinal meningitis of horses, osteoporosis, abortion of cattle, the diseases of fowls, etc., etc.

WHEREAS, Many of the questions involved in a study of these diseases can only be solved by co-operation between the practitioners who are brought in contact with them and an investigator who has superior facilities for research; and,

WHEREAS, It is of great importance to the public and the live stock industry of this State that the above mentioned and other diseases should be carefully studied, be it

Resolved, That the State Live Stock Sanitary Board is hereby requested to direct the State Veterinarian to cooperate with veterinarians and others of this State who have had experience with these imperfectly understood diseases and arrange to conduct investigations with a view of discovering their causes and the means to be employed in preventing and curing them; and be it further

Resolved, That a copy of these resolutions be forwarded to the President of the Live Stock Sanitary Board.

WHEREAS, At the last session of the State Legislature, said body created the Department of Agriculture, that the work falling in this line should be carried on more efficiently and effectively, and be it

Resolved, That we heartily concur in the creation of this Department, because we believe much more valuable services can thus be rendered through well established departments, with heads where responsibility of the work may be better fixed, where there may be hearty co-operation of the several lines of work, now placed under the control of this department, and which are so closely allied, as to lose much of their value when under widely scattered Bureaus or Boards.

Dr. Hart moved that our next place of meeting be at Reading at a time after the meeting of the United States Veterinary Medical Association. Carried.

Dr. Hart also moved that the Legislative Committee be instructed to present to the next legislature an amendment providing for an increase in the examination fee for veterinary surgeons from $10 to $20. Carried.

The retiring President then introduced the President-elect, Dr. W. H. Ridge, and the latter on taking the chair thanked the members of the Association for the honor conferred. The other officers-elect were then severally introduced and accepted the new duties assigned to them.

Dr. Pearson announced that Dr. Hoffman had a specimen, the heart of a pig, and also an instrument that he would exhibit at the Veterinary Department of the University of Pennsylvania, at which place Dr. Hoskins announced we would adjourn now to meet this afternoon.

Dr. Hart spoke upon the grand success of this meeting, and hoped that future meetings would not be recorded as less enthusiastic. He said it was the best meeting he had experienced for five years.

President Ridge then announced the names of standing committees for the ensuing year:

Committee of Arrangements:—Drs. W. S. Kooker, John Hart, Otto Noack.

Committee on Legislation:—Drs. Jno. R. Hart, Leonard Pearson, S. J. J. Harger, J. C. Fœlker, J. C. Michener, T. B. Rayner, Chas. Goentner.

Committee on Sanitary Science and Police:—Drs. Leonard Pearson, Chas. Schauffler, W. H. Knight, P. M. Minster, C. R. Good, M. E. Conard, Otto Noack.

Committee on Intelligence and Education:—Drs. W. L. Zuill, Robt. Gladfelter, Chas. Williams, M. J. Collins, J. W. Sallade.

Upon motion, we adjourned for luncheon, to meet at the Veterinary Department of the University of Pennsylvania at 2.30 P.M.

AFTERNOON SESSION.

At the Veterinary Department Hospital, in the operating room for horses, was witnessed the operation of cunean resection by Dr. Zuill, who operated both in the standing and recumbent positions. He removed sections of both tendons.

On the same subject Dr. Harger removed a portion of the median nerve, or median neurectomy, both operations being dexterously performed.

Dr. Pearson then demonstrated the use of barium chloride, but owing to the fact that the subject had been similarly experimented on by the students, he seemed to have tolerance, it failing to produce results; but an injection into the vein of another produced happy results.

Dr. Hoffman then exhibited an interesting specimen, heart of a pig, also an instrument to facilitate the operation of ovariotomy in cows or mares.

The instrument is original with him, and promises advantageous results over the "ecraseur." Upon request he demon-

strated the use of the instrument on a mare, extirpating the right ovary. He says he has operated on a large number of mares and cows without fatalities.

Dr. Hoskins gave his experience on the use of ethyl chloride as a local anæsthetic, he preferring it to cocaine for minor plastic operations.

Adjourned. W. G. BENNER, *Recording Secy.*

NORTH DAKOTA VETERINARY MEDICAL ASSOCIATION.

The fourth annual meeting of the North Dakota Veterinary Medical Association convened December 4, 1895, at the Hotel Dakota, Grand Forks, N.D. The following members responded to roll-call: Doctors Taylor, Turcott, Crewe, La Pointe, Shepperd and Hinebauch. The visitors present were Doctors Miller, O'Connor and Graftegraph.

The morning session was taken up principally with the report of the treasurer and secretary, and the reading of a paper by Dr. Hinebauch on the use of electricity in the practice of veterinary medicine and surgery. The paper was discussed at considerable length, a number of the veterinarians present having previously assisted the writer in diagnosing several cases of difficult lameness by means of the battery.

The afternoon session was opened by the president's address, and followed by another paper on the subject of millet disease in horses. This paper was a continuation of the one presented two years previous. In the discussion which followed, Dr. Turcott remarked that he had been somewhat skeptical regarding the influence of millet as a disease-producing food. He said that the evidence of the experiments, however, convinced him that millet had more or less of an influence in the producing of pathological conditions.

The Society is in a very healthy condition, having now a total membership of twenty. There are but twenty-one graduated veterinarians in the State, hence we think we can boast of a larger percentage of membership than possibly any other State society.

The Society can congratulate itself upon being able to have a law passed at the last session of the legislature which hereafter will practically control the practice of veterinary medicine and surgery in the State. Although the law was not all the Society wished, yet it was all that we could expect to have passed. The Legislature was thoroughly canvassed as soon as it had been

elected, and we could not do better than to have the present law passed, which is as follows:

Sec. 1615. *Qualifications of Veterinarians.*—Each person practicing veterinary medicine, surgery, or dentistry in any of its departments in this State shall possess the qualifications required by this article; provided that any person who has practiced veterinary medicine, surgery or dentisty as a profession in this State for three years immediately preceding the passage and approval of this article, and who shall be a citizen of the United States, or shall have declared his intention to become such, shall be deemed eligible to registration, and shall receive a certificate upon presentation of a sworn affidavit and letters of recommendation from five reputable freeholders in his locality, or upon presentation of a diploma from a legally authorized veterinary school, college or university, if made before July first, 1895.

Sec. 1616. *Board of Examiners, How Appointed; Term.*—The governor shall appoint a board of examiners within thirty days after the passage of this article, to be known as the State Board of Veterinary Medical Examiners. Such board shall consist of three practicing veterinarians, who shall each be the holder of a diploma granted by a legally authorized veterinary school, college or university, who shall hold office one for one year, one for two years, and one for three years, after such appointment, or until their successors are appointed. Thereafter each year the governor shall appoint one member of said board to fill the vacancy occasioned by the expiration of the term of office of those previously appointed, and is further authorized to fill such vacancies as may occur.

Sec. 1617. *Organization of Board.*—Said board shall elect a president, secretary and treasurer. It shall have a common seal, and the president and secretary shall have power to administer oaths. Said board shall hold meetings for the examination of candidates on the second Wednesday of April and October of each year, and such other meetings as may be deemed necessary, at such time and place as the board may appoint, no session to exceed two days. The board shall issue a certificate of qualification to all applicants who shall pass the required examination, and who shall be citizens of the United States, or shall have legally declared their intention to become such, and to all applicants who are eligible to registration under section 1615, signed by the president and secretary of the board. Such certificate or diploma shall be conclusive as to the right of the lawful holder of the same to practice veterinary medicine, surgery or dentistry in this State. Said board shall keep a record of all the proceedings thereof, and also a record or register of each applicant for a license, together with his age, name and time spent in the study and practice of veterinary medicine, surgery or dentistry; and if a graduate, the name and location of the school, college or university granting such diploma. Said books and records shall be *prima facie* evidence of all the matter therein recorded.

Sec. 1618. *Permit to Practice.*—Any person wishing to practice veterinary medicine, surgery or dentistry, who is qualified under section 1621, may apply to the president of the Board of Examiners for a permit to practice. The president shall, upon payment of five dollars, if satisfied that the applicant is qualified and a suitable person, issue to him a permit to practice until the next meeting of the Board of Examiners.

Sec. 1619. *Diplomas and Certificates.*—Persons presenting diplomas or certificates for registration shall pay to the treasurer of said board a fee of ten dollars in advance; and the fees received by said board shall be paid over to the State treasurer within thirty days after receipt of same. Said fees shall constitute a special fund for the payment of the expenses of said Board of Examiners. Each member of said board shall receive from the State treasury all necessary traveling expenses actually incurred in attending such meetings. The secretary of the board shall certify to the State auditor after each meeting of the board the amount due each member for necessary expenses of the board. The State auditor shall thereupon issue his warrant on the State treasurer for such sum, provided there has been a sufficient amount paid into the treasury in fees to redeem said warrants; but if there is not an amount equal to said certified expenses to the credit of such fund,

he shall issue his warrant for the amount in the said special fund, and deficiencies in the payment of said expenses may be made up from subsequent receipts.

Sec. 1620. *Misdemeanor to Practice, Etc., When.*—Any person who either :

1. Practices veterinary medicine, surgery, or dentistry in this State without compliance with the provisions of this article ; or

2. Willfully and falsely claims or pretends to have or hold a certificate of registration issued by such board ; or

3. Wilfully and falsely, with intent to deceive the public, claims or pretends to be a graduate of, or to hold a diploma granted by a legally authorized veterinary school, college or university, is guilty of a misdemeanor, and upon conviction is punishable by a fine of not less than fifty nor more than one hundred dollars, and in case of non-payment of such fine, the person so offending shall be liable to imprisonment for a period not exceeding six months. All fines received under this article shall be paid into the common school fund of the county in which such conviction takes place.

Sec. 1621. *Examination.*—All persons commencing the practice of veterinary medicine, surgery or dentistry in this State after the passage and approval of this act, shall be graduates of a legally authorized veterinary school, college or university, and shall subject themselves to such examination as the board may require.

Sec. 1622. *Certificates Recorded.*—Every person holding a certificate from the Board of Examiners shall have it recorded in the office of the Register of Deeds in the county in which he resides within thirty days after the date of said certificate, and the record shall be indorsed thereon. Any person removing to another county to practice shall record within thirty days the certificate in a like manner in the county to which he removes, and the holder of the certificate shall pay to the Register of Deeds a fee of one dollar for making the record.

Sec. 1623. *Gratuitous Services.*—Gratuitous service in cases of emergency in the dehorning of cattle, or castration of animals, shall not be construed as coming within the meaning of this article.

Sec. 1624. *Witnesses. Expert Fees.*—Any person complying with the provisions of this article shall be entitled to expert fees as a witness in all civil actions relating to the veterinary profession.

T. V. HINEBAUCH, *Secretary.*

CONNECTICUT VETERINARY MEDICAL SOCIETY.

A meeting of this society was held at the office of Dr. James Kelly, in New Haven, Conn., on the evening of March 10, 1896. In the absence of President Bland, Dr. Ross, of New Haven, called the meeting to order. The following members answered to roll call: Drs. Ross, Whitney, Kelly, Potter and Isaacs, of New Haven; Gardner, of Hartford; Beckley, of Meriden, and Eliot, of Ansonia. Drs. Lyman, of Hartford, and Martin, of Bridgeport, were present as guests.

After reading the minutes of the last meeting, Dr. Gardner entertained the members with an interesting paper, telling what was being done by the Connecticut Cattle Commission with bovine tuberculosis. A discussion was entered into by Drs. Lyman, Beckley and Ross.

Applications for membership were received from Dr. Ingraham, of Hartford, a graduate of the Ontario Veterinary College, and Dr. Lyman and Dr. Martin, both graduates of the Veterinary Department of Harvard University. The next meeting will be

on the afternoon of June 2, at the office of Dr. Thomas Bland, in Waterbury. H. W. ELIOT, *Secretary.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

A regular meeting was held in the library of McGill University, Thursday, January 23, Dr. Chas. McEachran presiding.

The reading of the minutes of the last meeting and the transaction of business arising out of the same being over, the report of the Experiment Committee was called for. The chairman of the committee reported progress, and Messrs. McCarry and Higgins were appointed to act until the next meeting.

Mr. J. A. Ness furnished an interesting case report and exhibited a peculiar looking specimen from the uterus of a cow. It consisted of a band of fibrous tissue about ten inches in length, the presence of which in the uterus had given rise to symptoms simulating labor pains. Sections had been prepared and were shown under the microscope evidencing the fact that the growth was composed of fibrous tissue only. Dr. McEachran was of the opinion that the band was a sequel of a previous parturition in which some lacerations had occurred. He had frequently found similar growths in the vagina, arising from apparently the same cause, and which were in many cases a mechanical obstruction to delivery.

Mr. J. J. McCarry read an instructive paper on "Post Mortems," describing in an entertaining manner the methods to be followed in conducting autopsies. This led to considerable discussion on the part of the members, during which were pointed out the precautions necessary when death had occurred from a disease of a contagious nature.

Dr. McEachran referred to the careless and consequently unsatisfactory manner in which post mortems are frequently conducted, and mentioned the fact that the only English work on the subject is that by Dr. Clement, of the class of '83.

The essayist for the next meeting was notified, and adjournment took place.

A well attended meeting was held in the Library, Thursday evening, Feb. 6, with the President, Dr. M. C. Baker, in the chair. The minutes of the previous meeting were read and approved. The librarian, Mr. J. A. Ness, reported the addition to the library of several new works.

Mr. Chas. H. Higgins, on behalf of the Experiment Committee, reported progress and requested an extension of time to furnish a report, which was granted.

Mr. J. J. McCarry reported an interesting case which had recently come under his observation. The subject was a horse, which, two years ago, as the result of a boiler explosion, had been blown through the doorway of a building, but was not at the time thought to have sustained any very serious injury. Shortly afterwards he developed a fistula above the point of the shoulder. A seton was inserted and the animal put to pasture. For a time recovery appeared to have taken place, but later the symptoms returned, and last December an operation resulted in the removal of a rivet-head about three-quarters of an inch in diameter from under the levator humeri, where it had probably lodged at the time of the explosion. The animal made a good recovery and is now working daily.

Mr. E. H. Morris read an excellent paper on "Hæmoglobinuria," which, it was stated, is not a disease of the kidney, but under the influence of various causes a secondary nephritis may accompany it. The symptoms, pathology, sequelæ and treatment were each in turn thoroughly described. One case, that of a mule, was instanced, that was peculiar in that the muscles of the shoulder were the ones affected.

The discussion following was mostly concerned with the treatment of the disease, and after further remarks by the chairman the meeting adjourned. HARRI H. DELL, *Sec. Treas.*

TORONTO VETERINARY COLLEGE MEDICAL SOCIETY.

The semi-weekly meeting of the Veterinary Medical Society took place in the lecture room of the college on Friday evening, March 13th, Prof. Smith presiding. Mr. G. R. C. Merriam, of Jamaica, read a carefully prepared and excellent essay on the subject of contagious pleuro-pneumonia in cattle, tracing the early history of the disease, its spread, and loss sustained by agriculturists in many countries where the disease existed. Mr. Merriam also fully explained the more recent investigations and experiments of Arloing, in relation to the bacillus just described by him (pneumo-bacillus liquefaciens bovis).

Mr. James A. Stevenson brought the subject, "Infectious Diseases of the Ox," before the meeting. His essay was an elaborate, interesting, and very perfect description of the more common infections of cattle.

Mr. A. E. Williamson, of Queenstown, Ireland, addressed the meeting on the value of eserine in many of the digestive disorders of the horse, pointing out such cases as were effectually relieved by its use. He also pointed out those cases where its use is contra-indicated.

Mr. Wilson read a paper on "Laminitis," and treated his subject in a very able manner.

The communications were selected by Mr. Le Gen, and Mr. L. F. Wingate.

MASSACHUSETTS VETERINARY ASSOCIATION.

The regular meeting of this association was held at 19 Boylston Place, Wednesday, February 26th, at 8 P.M.

Dr. Parker, the President, in the chair.

The following members were present: Drs. Beckett, Blackwood, Bunker, Burr, Cronan, Emerson, Hamilton, Lewis, LaBaw, Osgood, Parker, Pierce, Rogers, Sheldon, Winslow, Winchester and McLaughlin. Honorary member, Dr. Stickney.

Minutes of last meeting were read and accepted, after Dr. Burr had corrected his statement in regard to tuberculin, having it read "good" instead of "reliable."

The Secretary called the attention of the association to the fact that the election of Drs. Frothingham and Cannon were illegal, not having been before the association the length of time prescribed by the constitution. Dr. Osgood then moved that we again ballot on these names; carried; and they were unanimously elected.

Cases reported:

Dr. Pierce reported case of mare, six weeks in foal, having dizzy spells when first starting on a drive; would have only one attack. After removing overdraw check from harness there was no more trouble.

Dr. McLaughlin reports interesting case, as history is well known. Cow calved and cleaned all right a little over a year ago, following which she had a number of attacks of supposed indigestion. Last calf came two weeks before time and inside of one week showed dropsy of legs and abdomen. Diagnosed foreign body in heart. Autopsy showed wire three inches long through right auricle at apex. Abscess at point of entrance of wire.

Dr. Burr saw in a post mortem case the track of a wire from the second stomach to the pericardium; fluid and the wire in the pericardial sack.

Dr. Emerson saw a cow that had been fed on lawn grass. Had a number of attacks of supposed indigestion, but finally died, and a nail was found in the pericardium.

Dr. Beckett had a large horse with peculiar, sudden lameness; would point and rest on outer toe; no soreness in foot or at any point. Diagnosed possible paralysis.

Dr. Burr reported similar case that Dr. Bryden had.

Dr. LaBaw had similar case. Horse had been cast. On attempting to rise, failed. Rolled him over and he got up, but was unable to support body on that leg.

Drs. Bunker and Parker reported undesirable effect from calomel. Swelling of lips, tongue and profuse salivation.

HOWARD P. ROGERS, M.D.V., *Secretary.*

COMMUNICATIONS.

THE U. S. V. M. A. PRIZE.

BROOKLYN, Feb. 12, 1896.

Editor American Veterinary Review:

DEAR SIR:—Your editorial comments in this month's REVIEW on Dr. Tait Butler's report as Chairman of the Prize Committee will meet with the approval of a large majority of the members of the U. S. Veterinary Medical Association.

You say that you hope his conclusions, that the prize be discontinued for a few years at least, will not be accepted, but on the contrary, the national body, in its wisdom, will adopt measures to encourage the competition and keep up its offer of a prize for the best paper presented.

I have been a member of a Prize Committee for the past eight years, and so disgusted was I with the non-action of the various chairmen during that time, that when the President of the Association again asked me to become a member of the said committee I positively declined, unless the chairman was to be a live and energetic one. Upon these conditions I consented to act; but, to my surprise, Dr. Butler was as dead as his predecessors, until he suddenly seems to awaken to the fact that he should do something, when he immediately acts upon his conviction, and "through a misunderstanding of his own," utterly neglects to notify the members of his committee as to his revelation. He neither directly nor indirectly communicated with me as to what should or should not be done, and I must say that I read, with much surprise, his one-headed report at the last meeting of the Association. For what purpose is a committee appointed, if not to act in conjunction with its chairman? One would feel surprised that so prominent a member of the profession as Dr. Butler would so far neglect the important duties of a chairman. He unsparingly and justly condemns previous presidents of this committee for non-action, while he presumes to bring this recommendation before the Association without even offering to the members of his committee the courtesy of a voice in the matter. Surely, in this case

we are confronted with the two extremes. I, having been one of this committee for several years, am in position to know that the miscarriage of its object has been entirely due to the comatose condition of the various presidents of the same.

One of the fundamental objects of our Association is to disseminate scientific knowledge amongst its members, and if the offering of this prize aids in that object, why withdraw it? It cannot be owing to the anæmic condition of our exchecquer, as those competing do so more for the honor than the money value of the prize; although the money value seems to have been highly beneficial at a critical moment to others.

Fortunately, our chairman's recommendation must be acted upon at our next annual meeting before final adoption, when I trust it will receive the consideration it deserves.

Yours truly, L. McLEAN, M.R.C.V.S.

WASHINGTON, C. H., O., April 1st, 1896.

To the Veterinarians of Ohio:

Any veterinary surgeon who desires to know if any veterinary practitioner is illegally practicing in any part of this State, can receive the information by addressing the Secretary of the State Veterinary Association, as he has been furnished with a list of all those who have passed the examination prescribed by Ohio law.

The next meeting of the Ohio Veterinary Examining Board will be held in Columbus, April 14th, 1896, and it is hoped that all recent graduates and all those entitled to examination will avail themselves of the opportunity and obtain their certificate.

W. H. GRIBBLE, *Sec'y O. S. V. M. Association.*

THERAPEUTIC RECORDS.

PREVENTIVE AGAINST TAPEWORM IN DOGS.—Chloroform, 4 grammes; croton oil, 1 drop; glycerine, 30 grammes; mix. This preparation, administered in one dose, will do well for days; it contains the vermifuge and the purgative.

AGAINST THE ECZEMA OF DOGS.—The following are recommended by Arnous in this troublesome affection: 1st.—Powder: Burnt magnesia and starch, of each, 10 grammes; mix, and apply locally. 2d.—Ointment: Liquid pitch and soap of potash, of each, 50 grammes; alcohol, q. s.; make a liniment and apply locally.

VERATRINE AGAINST ACUTE MAMMITIS.—Mr. Detcherers recommends the hypodermic injections of veratrine in the treat-

ment of acute attacks of mammitis in cows. The results that he has attained are most satisfactory, producing an abortion of all the acute symptoms in a short time, without having recourse to any other local applications. The solutions are made as follows: Veratrine, 40 centigrammes; alcohol at 90°, 5 or 6 grammes. This in injected five or six times, at seven or eight minutes apart. The injections may be repeated if a second congestive process manifests itself.—*R. de M. V.*

NEWS AND ITEMS.

THE CATHODE RAYS.—Dr. Edmund E. King, of Toronto, gave an address in the lecture hall of the Ontario Veterinary College to the students on Thursday evening on the new photographic process, called the "cathode rays." His explanations of the method, which he demonstrated by the use of apparatus, were exceedingly clear, and were warmly appreciated. He said that it was more correctly called the "X rays," and that it differed from photography in representing the shadow, rather than the image or figure itself. That flesh, wood, leather, and some other substances could be readily penetrated by the "rays," while bone and some metals were impenetrable. Therefore, the bones within the body of a man or animal could be readily examined by this method. The "X ray" is, without doubt, destined to be of inestimable benefit to science in the near future.

SANMETTO.—This preparation, which is a blending of "saw palmetto" and "true santal," has recently been brought prominently before the veterinary profession as a stimulating remedy for diseases of the genito-urinary organs. In a neat pamphlet, issued by the manufacturers, Od Chemical Co., 15 Cedar St., New York, is contained many certificates from veterinarians bearing witness to its remarkable results in affections of the bladder, kidneys, and urethra, as well as for pre-senility in stallions and dogs. Sample bottle mailed free to veterinary surgeons. See their advertisement.

A CHANGE FOR THE BETTER.—The New York County Veterinary Medical Association at its last meeting decided to change its meeting place to the Academy of Medicine, which at once lends dignity and independence to its deliberations, and is better in very many other respects.

MORE VIRGINIA VETERINARY LAWS.—The profession in Virginia is accomplishing much in the way of legislative recognition. In addition to the law regulating practice in that commonwealth, printed elsewhere, the State assembly has approved "An act to provide for the protection of domestic animals, and

to authorize and empower the board of control of the experiment station of the Virginia Agricultural and Mechanical College at Blacksburg to establish live stock quarantine lines, rules and regulations, and to prescribe penalties for violating the same."

FRENCH APPROPRIATIONS TOWARDS VETERINARY SURGEONS.—The allowances made by the government for the support of the three Veterinary schools in France, amounts to the round sum of 1,576,950 francs, about $315,390.

ABNORMAL FECUNDITY IN A COW.—A Norman cow died three weeks before calving. At the post mortem, the uterus was found to contain six calves, four males and two females, all in good condition and well formed. Altogether they weighed 108 kilogrammes, over two hundred pounds.

MONUMENT TO PASTEUR.—An international subscription for the monument to Pasteur upon one of the squares in Paris is started by a committee composed of members of the Council of the Institute Pasteur. The subscription can be addressed rue Dutot 25, in Paris.

HONOR TO DIRECTOR DEGIVE.—The eminent director of the Brussels Veterinary School, late president of the Academy of Medicine of Belgium, has been made Officer of the Order of Leopold, one of the highest honors in Belgium.

STERILIZATION OF TUBERCULOUS MEAT IN BELGIUM.—Tuberculous meat of animals in good, fat condition, by a ministerial order, shall be admitted to general consumption after being submitted, under the directions of a veterinarian, to an average temperature of 116°C. for three hours at least, in a sterilizing apparatus accepted by the government.

A RECENT LETTER from that Nestor of veterinary medicine, Jno. C. Meyer, Sr., of Cincinnati, shows that while advancing years have precluded his active participation in the events that are transpiring, his interest in them is as acute as in years gone by. May his sun continue to shine for many years, and spread its glorious lustre as of yore.

NEW HAMPSHIRE VETERINARY MEDICAL ASSOCIATION.—The next meeting of this association takes place the first Tuesday in May—quarterly instead of monthly, as heretofore.

"THE HORSELESS AGE."—People whose memory antedates the steam engine as a means of popular transportation, say that its invasion and the displacement of the stage coach caused a greater stir among breeders, and others interested in the horse, than the competitors which that animal has recently acquired in the electric motor, the bicycle and the much-flaunted horseless carriage has recently produced. The horse increased in numbers

almost as rapidly as railroad tracks were laid, and he will outlive the present depression in the same manner. The *American Horse Breeder* had an interesting statistical article to this effect in its issue of March 3d.

THE VETERINARIAN'S FUTURE.—Apropos of the recent meeting of the Pennsylvania State Veterinary Medical Association, a writer in the *Turf, Field and Farm* says:—"It does, however, seem, notwithstanding the plaudits of the meeting, the lot of the practicing veterinarian is by no means a desirable one. With the diminishing use of the horse, low prices and increasing intelligence of the people, and flooding the country with prepared nostrums, the veterinarian is bound to find his field or future operations a circumscribed one indeed, and he has our sympathy," which simply shows that the writer of that paragraph is not sufficiently acquainted with his subject to know that the veterinarian's future calling is an expanding rather than a contracting one.

HIGH-PRICED CANINES.—Senator Wm. H. Reynolds, of Brooklyn, N. Y., purchased at the late Westminster Kennel Club Show, at Madison Square Garden, the champion St. Bernard dog Otos, and his young son, Hellgate Defender, paying for them $4,000 and $2,500 respectively.

MEMBERS who desire to present papers before the U.S.V.M.A. at Buffalo, in September, should at once notify the Secretary, Dr. S. Stewart, of Kansas City, Kansas. The programme will be made up and placed in the hands of the membership at the earliest possible date.

AT A SPECIAL Civil Service examination held in Kansas City, March 10th, six veterinarians took the examinations for the position of meat inspector, about 40 men for the office of live stock examiner, and 10 for tagger.

FREE VETERINARY SERVICE.—The following advertisement was in the *New York Herald* of Sunday, March 8th.: "Horses insured against death by disease or accident. Free veterinary service and medicines furnished. (N. Y. Vet. Hospital Service for N. Y. City.) Prominent Veterinarians for all other points. $30,000 paid for losses in New York City. Reserve Fund Live Stock Insurance Co., Lincoln Building, Union square, N. Y. City. Write for particulars."—The moving spirit of the New York Veterinary Hospital is now under charges before the New York County Veterinary Medical Association. A man of standing who becomes the insurance "free doctor," does a great injury to honest practitioners, and brings a boomerang upon himself.

A. V. C. COMMENCEMENT NOTES.

When you're called to make an appointment
Don't forget to take that ointment,
Made of wax and Spanish fly,
Rosin and euphoribii,
Olive oil and nigræ pix.
Hurrah for the Class of '96.

The above is the college cry of the Class of '96 of the American Veterinary College, composed by one of its members and taken from the College Blister given them by the instructor in prescription writing.

THE Alumni Association have nominated the following gentlemen for the Alumni Trustees: Drs. Wm. Herbert Lowe, of N. J., L. H. Howard, of Mass., and C. Burden, of New York County.

THE 21st Annual Banquet of the Alumni Association of the American Veterinary College, held March 25th, at Clark's, was a grand success in every particular, some fifty members being present.

PROF. A. F. Liautard sent a cablegram from Paris wishing the Class of '96 success, and best wishes, and life to the A. V. C.

DR. L. H. Howard, of Boston, was elected President of the Alumni Association of the American Veterinary College.

DR. W. B. E. Miller, of Camden N. J., has been duly elected a permanent Trustee of the American Veterinary College.

THE address delivered by Prof. J. W. Dowling, M. D., at the Commencement Exercises at Chickering Hall, deserved the applause it received.

PROF. J. J. Harger, of the University of Penn., and Prof. H. D. Gill, of N. Y., were present at the Commencement Exercises and the Banquet. F. X. T.

COMMUNICATIONS RECEIVED.

Communications are acknowledged from the following: W. F. Derr, V.S., Jno. M. Parker, D.V.S., E. L. Morgenroth, M.D.C., J. R. Kelso, D.V.S., E. P. Niles, D.V.M., T. W. Watson, V.S., H. D. Fenimore, D.V.S., F. C. Williamson, V.S., W. V. Beesit, D.V.S., W. E. Smith, D.V.S., Robert Robb, V.S., James A. Waugh, V.S., J. C. Michener, V.S., F. S. Allen (2), D.V.S., W. L. Rhoads, D.V.S., Robt. W. Ellis, D.V.S., W. H. Curtiss, D.V.S., Harri H. Dell, W. H. Gribble, D.V.S., Ch. Marchand, and several others.